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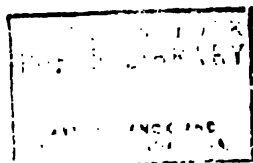
Chief Inspector of Mines



Thirty-Fourth Annual Report

To the Governor of the State
of Ohio for the Year
Ending December 31st,
1908

GEORGE HARRISON, Chief Inspector





MINES BUILDING OF THE OHIO STATE UNIVERSITY OCCUPIED BY THE SCHOOL OF MINES AND DEVOTED TO INSTRUCTION IN MINE ENGINEERING, METALLURGY, COAL TESTING, AND CERAMICS. IT IS EQUIPPED WITH APPARATUS FOR THE STUDY OF MINE GASES, SAFETY APPLIANCES AND MINE ACCIDENTS.

Thirty-Fourth Annual Report

OF THE

Chief Inspector of Mines

TO THE
HONORABLE
GOVERNOR
OF THE STATE OF OHIO

Governor of the State of Ohio

FOR THE

Year Ending December 31, 1908



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State Printers.
1909.

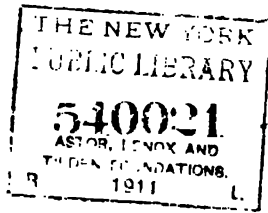


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PERSONNEL OF STATE MINING DEPARTMENT

Chief Inspector of Mines.

GEO. HARRISON.....Wellston, O.

First District.

Thos. Waters...Wellston, O.

Second District.

Jno. L. McDonald.....Glouster, O.

Third District.

James Pritchard (Resigned July 31, 1908).....Hemlock, O.
(Succeeded by Wm. C. Wiper, Malta, O.)

Fourth District.

Ebenezer Jones.....Martins Ferry, O.

Fifth District.

W. H. Turner.....Cambridge, O.

Sixth District.

Thos. Morrison.....Sherodsville, O.

Seventh District.

W. H. Miller.....Massillon, O.

After the passage of the law April 15, 1908, creating three new inspectors, the number of districts was changed to ten, as follows:

First District.

Thos. Waters.....Wellston, O.

Second District.

Edw. Kennedy (Appointed June 1, 1908).....Sand Run, O.

Third District.

Jno. L. McDonald (Reappointed June 1, 1908).....Glouster, O.

Fourth District.

Wm. C. Wiper (Appointed August 1, 1908).....Malta, O.

Fifth District.

W. H. Turner.....Cambridge, O.

Sixth District.

Alex Smith (Appointed June 1, 1908).....Mineral City, O.

Seventh District.

W. H. Miller (Reappointed June 1, 1908).....Massillon, O.

Eighth District.

Lot Jenkins (Appointed June 1, 1908).....Bellaire, O.

Ninth District.

Thos. Morrison.....Sherodsville, O.

Tenth District.

Ebenezer Jones.....Martins Ferry, O.

Chief Clerk.....Mary Kincaid, Columbus, O.
Stenographer.....Hattie McGhee, Columbus, O.
Assistant Clerk.....Hazel Sims, Columbus, O.

LETTER OF TRANSMITTAL.

Hon. Judson Harmon, Governor of Ohio.

SIR:—As provided for in Section Two Hundred and Ninety-three (293) of the Revised Statutes, relating to Mines and Mining, I have the honor of submitting to you the Thirty-fourth Annual Report of this Department.

Very truly yours,

GEO. HARRISON,
Chief Inspector of Mines.

June 28, 1909.

REPORT OF CHIEF INSPECTOR

Hon. Judson Harmon, Governor of Ohio:

DEAR SIR:—In submitting this, the Thirty-Fourth Annual Report of this department, the unpleasant duty devolves upon us to record a year of depression such as has not been experienced in the past history of the coal mining industry in the state, inflicting hardships with equal effect on the employees and on the owners or operators of the mines.

While statistics, as a rule, are considered "dry and uninteresting," it will be necessary, in order to give a resume of the year's activities, to indulge in them to a certain extent in order to note the progress or retrogression of the industry.

All are more or less familiar with the industrial depression which was felt throughout the country during the latter part of the year 1907, and continued throughout all the year 1908. This condition seriously affected the coal industry of this and other coal-producing states, as shown by the total production in Ohio of 26,287,800 tons, or a loss of 6,078,149 tons as compared with the preceding year, wiping out the phenomenal increase in 1907, and reducing the production in 1908 below that of 1906 by 925,695 tons.

This is the first backward step in the production of coal in the state for eleven years, or since 1897, when the total production was 12,448,822 tons as compared with 12,912,608 tons in 1896. Notwithstanding the great falling off during the year, the total production of 26,287,800 tons is more than double that of 1897, showing a steady and rapid increase during the last eleven years.

Of the amount of coal produced in 1908, 17.8% was produced by the old hand-pick method, and 82.2% by mining machines. Including all classes of labor in and about the mines, 50,267 persons were employed.

In 1897, the proportion of coal by hand-pick method was 67%, and that of mining machines, 33%. The number of persons employed was 28,785.

The ever-attendant death rate in connection with the production of coal was reduced from 153 persons reported killed in the mines of the state in the year 1907, to 112 recorded in the year 1908, a decrease of 26.7%, while the coal tonnage decreased 18.7%.

The mining legislation enacted by the Seventy-Eighth General Assembly became operative during the latter part of the year, and while not as

broad and comprehensive as we think it should be, has resulted, and will result in untold benefits to the mining craft at large, especially the law relating to the conducting of electric power in the mines, and also the use of explosives, handling, boxing, etc., of same, as well as the law requiring copper tools used in preparing blasts.

On account of the extensive and increasing use of electricity as a motive power, and the disposition of a portion of the operators to increase the voltage, with very careless systems of conducting the power, eleven lives were lost in the mines of Ohio during 1907, by contact with electric wires, and no law on the statute books in any way directing or controlling its use.

During the year 1908, however, the department outlined and required more uniform and safer methods of conducting electric wires in mines, and protecting them so as to avoid easy contact; and by the diligent efforts of the district inspectors, sustained and assisted by the new law, the number of deaths from electric shocks during this year was reduced over one-half, and we hopefully anticipate that by reasonable enforcement of the law, fatalities from this cause will almost be wiped out, which they ought to be.

As already stated, the year was a most trying one, especially for those earning their livelihood from this source. In many parts of the state work was scarce during the entire year, while in other parts it was impossible to secure employment. The average time worked in the state was about 158 days, a very low average indeed. For those whose capital was invested in the mines it was also a strenuous year of disappointment. Being a very mild and open season, to an unusual degree, little coal was required for domestic fuel. Low prices prevailed and keen competition was encountered from other states.

The Mining Commission, made possible by an act passed by the legislature May 9, 1908, was appointed by Governor Andrew L. Harris on July 8, 1908, naming three miners and three operators. The operators of the state were represented on the commission by the appointment of J. J. Roby, Cleveland, Ohio; C. L. Cassingham, Cleveland, Ohio, and G. C. Weitzell, Columbus, Ohio. The miners were represented by the appointment of Percy Tetlow, Washingtonville, Ohio; James Hennessey, Barton, Ohio, and H. F. McCauley, Ava, Ohio. As provided for in the act, these six members met and recommended a seventh member, naming Chief Inspector of Mines George Harrison, who was also appointed and commissioned by Governor Andrew L. Harris.

An organization was effected, and a systematic inspection commenced of the mines located in the various mining districts of the state; in all, over thirty mines were visited and examined. After this was completed, the commission took up the still further arduous task of revising and remodeling the mining laws, and devising new laws necessary. It was at

once evident that the work undertaken was of such a voluminous character, and the time so limited after the appointment of the commission, that no attempt was made to submit a report to the governor on January 1, 1909, but an appropriation for the continuation of the commission was requested of the legislature, which generously provided the amount asked for, viz: \$5,000 for its use.

It is the earnest hope and expectation of all to have a unanimous report submitted, and that adequate laws and great good will result from its recommendations.

The relation between miners and operators during the year was most harmonious, although there was a suspension of several months, due to the expiration of the wage scale agreement on April 1, 1908. However, this was settled at a convention held in Toledo, Ohio, during the month of April, 1908, and an agreement entered into for two years.

On June 1, 1908, in compliance with the requirements of the mining laws, passed April 15, 1908, three additional inspectors were appointed, making ten in all. The state was re-districted, and the work of the original inspection force was very materially reduced, i. e., the work was not lessened, but the number of counties in charge of inspectors was arranged so that they had more time to spend in the mines entrusted to their charge. Much better and more satisfactory inspections should result from this increased force.

The new inspectors appointed were: Alex Smith, Mineral City, Ohio, Edw. Kennedy, Sand Run, Ohio, and Lot Jenkins, Bellaire, Ohio.

On July 31, 1908, Jas. Pritchard, inspector of the Third Mining District, resigned to accept a more lucrative position with the Sunday Creek Company. The department lost in Mr. Pritchard a capable, efficient and enthusiastic member, and his resignation was accepted with much regret. W. C. Wiper, Malta, Ohio, was appointed to fill the vacancy.

To Hon. Andrew L. Harris, under whose administration the consummation of the year's work was accomplished, we extend our most sincere appreciation for his ever able and willing assistance and sound advice in the administration of its affairs.

One thousand nine hundred and seventy-seven visits were made to the mines in the state by the chief and district inspectors of the department. Doubtless many more inspections would have been made had the mines in the state been operated to near their capacity. Much time, under such conditions, is lost by inspectors driving long distances to mines and finding them idle, and ventilating machinery closed down, thus making it impossible to make any satisfactory inspection. Many mines remained suspended the whole year, while others worked about half time. Excellent work was done and much good accomplished by the inspectors during the year, in their diligent devotion to duty and judicial enforcement of important orders of the department and new laws.

We are greatly indebted to the inspectors and to the office force, and fully appreciate their efforts to maintain a high standard of excellence, which should always be kept in view as the object and aim of the department.

The relation between miners, operators and the department has been for the most part of the most pleasant character, their treatment at all times being most courteous.

With an optimistic hope for a more successful year in the coal industry for the year 1909, this report is respectfully submitted.

Very truly yours,

GEO. HARRISON,
Chief Inspector of Mines.

Columbus, Ohio, June 28, 1909.

**SUMMARY AND COMPARISON OF THE COAL TRADE OF OHIO FOR THE
YEARS 1907 AND 1908.**

| | 1907 | 1908 |
|---|------------|------------|
| Number of pick miners employed..... | 9,631 | 8,997 |
| Number of drillers, shooters and loaders..... | 21,775 | 24,882 |
| Number of hands operating machines..... | 2,963 | 3,167 |
| Number of day hands employed in both pick and machine mines | 13,507 | 13,221 |
| Total number of persons engaged in the production of coal..... | 47,876 | 50,267 |
| Gain in men over year 1907..... | | 2,391 |
| Average number days pick miners worked..... | 191 | 160 |
| Average number days machine miners worked..... | 201 | 157 |
| Average number days machine runners worked..... | 206 | 157 |
| Number tons of coal produced by pick..... | 6,511,773 | 4,676,869 |
| Number tons of coal produced by machinery..... | 25,854,176 | 21,610,931 |
| Total number of tons produced..... | 32,365,949 | 26,287,800 |
| Loss in output as compared to 1907..... | | 6,078,149 |
| Per cent. of pick-mined coal..... | 20.1% | 17.8% |
| Per cent. of machine-mined coal..... | 79.9% | 82.2% |
| Number of coal-producing counties..... | 29 | 29 |
| Average number tons lump coal produced by pick miners per year | 445 | 350 |
| Average number tons lump coal produced by pick miners per day | 2.3 | 2.2 |
| Average number tons lump coal produced by drillers, shooters and loaders per year..... | 824 | 589 |
| Average number tons lump coal produced by drillers, shooters and loaders per day..... | 4.1 | 3.8 |
| Average number tons lump coal produced by machine run- ners per year..... | 6,056 | 4,627 |
| Average number tons lump coal produced by machine run- ners per day..... | 29.4 | 29.5 |
| Number of fatal accidents..... | 153 | 112 |
| Number of serious accidents..... | 493 | 426 |
| Number of minor accidents..... | 169 | 170 |
| Total number of casualties..... | 815 | 708 |
| Number of deaths per thousand employed..... | 3.2 | 2.2 |
| Number of serious injuries per thousand employed..... | 10.3 | 8.5 |
| Number of minor injuries per thousand employed..... | 3.5 | 3.4 |
| Number tons coal mined for each life lost..... | 211,542 | 234,713 |
| Number persons employed for each life lost..... | 313 | 449 |
| Number persons employed for each serious accident..... | 97.1 | 118 |
| Number persons employed for each minor accident..... | 283 | 296 |
| Number kegs powder used as reported..... | 271,921 | 230,983 |
| Total number new mines opened..... | 57 | 55 |
| Number large mines suspending operation..... | 24 | 29 |
| Number large mines reported abandoned..... | 58 | 37 |
| Total number mines in operation..... | 980 | 1,051 |
| Number mining machines in use..... | 1,396 | 1,445 |
| Number motors in use..... | 359 | 383 |
| Total number inspections made..... | 1,794 | 1,979 |
| Number sets scales tested..... | 149 | 69 |
| Number permanent improvements made..... | 290 | 298 |
| Number maps filed..... | 451 | 422 |
| Number tons fire clay produced..... | 2,177,174 | 2,004,019 |
| Number fire clay producing counties..... | 17 | 19 |
| Number persons employed producing fire clay..... | 1,443 | 1,191 |
| Average number days worked for year in fire clay mines.. | 239 | 223 |
| Number counties producing limestone..... | 34 | 37 |
| Number persons employed in production of limestone..... | 5,420 | 4,678 |
| Average number days worked in limestone quarries..... | 248 | 225 |
| Number tons gypsum produced..... | 163,120 | 154,436 |

**SUMMARY AND COMPARISON OF THE COAL TRADE OF OHIO FOR THE
YEARS 1907 AND 1908—Concluded.**

| | 1907 | 1908 |
|--|-------|-------|
| Number persons employed in production of gypsum..... | 165 | 192 |
| Average number days worked in gypsum mines..... | 262 | 243 |
| Number tons iron ore produced..... | 2,423 | 2,120 |

SPECIAL ARTICLES

FITTING REWARD TO THE WIDOW AND FAMILY OF JAMES SKINNER,
WHO LOST HIS LIFE IN AN EFFORT TO RESCUE THE VICTIMS OF
THE MINE EXPLOSION AT GARSIDE MINE, MAY 24, 1908.

"A REWARD FOR HEROISM COMES TO WIDOW OF SALINEVILLE MAN
WHO GAVE HIS LIFE FOR OTHERS—AN ANNUITY FOR THE CHILDREN.

"On May 27th, 1908, Francis C. Skinner, an employe of the Big Vein Coal Company's new shaft mine at Salineville, lost his life in the effort to rescue two of his comrade workmen who were in the gas explosion in the mine on that day. Mrs. Mary F. M. Skinner, widow, with six small children in ages ranging from one to twelve years, has received official notice from the Carnegie hero fund commission at Pittsburg, Pa., of which the following is a copy of the notice:

CARNEGIE HERO FUND COMMISSION

Office in Carnegie Bldg., Pittsburg,

January 20th.

Mrs. Mary F. M. Skinner, Salineville, O.

Dear Madam:—Through the courtesy of Mr. James G. Smith, president of the Miners' Local Union of Salineville, Ohio, the attention of the Carnegie Hero Fund Commission has been called to an act performed by your husband, Francis C. Skinner, by which on May 24, 1908, he attempted to rescue Wesley J. Wright and John W. Rowe from a mine following an explosion at Salineville, Ohio, but in the performance of which act he met death himself.

His case, after a thorough investigation, was considered at a meeting of the commission held this afternoon, and I have much pleasure in informing you that in recognition of your husband's heroism on that occasion, the commission awarded you a silver medal and the sum of \$40.00 a month during your life or until you remarry, or until further notice, with \$5.00 a month additional for each of your children under sixteen, while the child is dependent upon you, and until it reaches the age of sixteen.

I will be obliged if you will kindly advise me without delay by letter bearing your own signature, whether or not you wish to accept the commission's award. If your reply is affirmative, the medal will be ordered and delivered to you as soon as it has been received from the manufacturers.

Yours very truly,

F. M. WILMONT, Manager."

(Alliance Leader.)

Columbus, Ohio, February 15, 1909.

Mr. Jas. G. Smith, Salineville, Ohio:

Dear Sir—Through Mr. Alexander Smith, our district inspector, we have received information as to the allowance made to Mrs. Skinner and family from the Carnegie hero fund. We regretted very much the death of Mr. Skinner, as well as the other victims in that case, but, as the poet says, "The fittest place where man can die is where he dies for man," and there is no class of people that is more heroic and ready to risk their lives for their fellow-men than the miners. The reward for such action, however, is not often so noticeable.

We are, indeed, pleased to note that you exercised your influence in securing this allowance to Mrs. Skinner and family, and particularly pleased to notice that you were so successful.

Very truly yours,

GEO. HARRISON,
Chief Inspector of Mines.

Salineville, Ohio, February 17, 1909.

Mr. Geo. Harrison, Columbus, Ohio:

Dear Sir and Brother—I herewith acknowledge receipt of your kind favor of recent date, and was especially pleased to hear from you and the appreciation you have shown me in my success in helping to bring about the awards granted Mrs. Mary F. M. Skinner. I owe much to Brother Alexander Smith, in a letter I received from him last June 25, 1908, calling my attention to this matter, and for the kind assistance of Brother William Green and Percy Tetlow. I know of no case more worthy, or where this amount per month, as awarded, is more deserving than in this case. I herewith enclose you a newspaper clipping, taken from a carbon copy which I have in my possession.

Assuring you of my best wishes and kind regards, I am,

Very truly yours,

JAMES G. SMITH.

HISTORY OF THE ORGANIZATION OF THE MINE INSPECTORS' INSTITUTE OF THE U. S. OF A., HELD IN INDIANAPOLIS, INDIANA, IN JUNE, 1908.

Within the past thirty-five years the coal producing states of importance have, by legislation, created the offices of State Mine Inspectors, and in some states Departments of Mines have been created, all of which have for their purpose the inspection of mines to determine if the mining statutes for the preservation of health and safety are properly observed.

In the respective states the inspectors have had the benefit of frequent conferences relative to conditions peculiar to their own state, and inspectors of the different states occasionally meet in a convention of mining engineers and mining institutes for the discussion of general mining questions.

The list of state inspectors has assumed such proportions that for some time it has appeared a conference of the inspectors of the various states and territories could accomplish much good.

The question of calling a general conference of state inspectors has been seriously considered by a number of the chiefs of the mining departments, mining bureaus, chief mine inspectors and state inspectors for several years past.

Some of the great mine disasters of 1907 brought together representatives of the inspection department of several of the states, and upon these occasions a profitable exchange of views was had pertaining to mine dangers, legislation and enforcement of law.

On every hand encouragement was given to the proposal to formulate a national organization of mine inspectors. Much interchange of correspondence was had upon the question as to the proper and most effective and satisfactory manner in which to issue a call for a conference of the inspectors of the different states. First one and then another inspector was importuned to issue a call, but in no case did any chief or state inspector presume to assume the role of fathering such a movement.

The matter of a conference of the inspectors was brought to the attention of one who had for some time given the question of such a conference much encouragement, and it appeared to a number of the chief inspectors that a circular signed by the chiefs of several states would be the most effective manner of insuring a representative attendance at a conference.

In order to secure the assurance of good faith in the movement, Prof. J. T. Beard, Scranton, Pa., was prevailed upon to formulate a letter endorsing the proposed conference for the signatures of several of the chiefs of the state inspection departments. This letter made the circuit of seven states and returned to Professor Beard, having the unqualified approval of:

Mr. James Epperson, Chief Mine Inspector for Indiana.

Mr. George Harrison, Chief Inspector of Mines for Ohio.

Mr. Richard Newsam, President State Mining Board for Illinois.

Mr. John Verner, State Mine Inspector for Iowa.

Mr. R. A. Shifflett, Chief Mine Inspector for Tennessee.

Mr. J. W. Paul, Chief of Department of Mines for West Virginia.

Mr. J. M. Gray, Chief Mine Inspector for Alabama.

Upon the receipt of the foregoing endorsement, Professor Beard, at the solicitation of those who approved the conference, and at the expense of much labor on his part, sent out a call for a national conference of the mine inspectors of the United States of America, to be held beginning Tuesday, June 9, 1908, in the State Capitol, Indianapolis, Ind.

J. W. P.

CONSTITUTION AND BY-LAWS OF THE MINE INSPECTORS' INSTITUTE
OF THE UNITED STATES OF AMERICA, AS ADOPTED AT THE OR-
GANIZATION OF THE INSTITUTE, JUNE 11, 1908.

ARTICLE I.

The name of this institution shall be Mine Inspectors' Institute of the United States of America.

ARTICLE II—OBJECTS OF THE INSTITUTE.

Section 1. The objects of this organization are to secure as far as practicable uniformity of mining legislation in all of the several states and territories, more uniformity of enforcement of mining laws and the dissemination of technical mining knowledge among the members thereof so as to give greater efficiency to the mine inspection system and to give better protection to the lives and health of the persons employed in mines and to protect the mining properties, and to conserve the national resources relative to mining, and to establish a closer union between the mining bureaus and inspectors of the coal-producing states in this country, to provide information to members tending to formulate greater safety in mining and to do such other things as may be conducive to the good of the mining industry.

ARTICLE III.—MEMBERSHIP.

Section 1. The membership of this institute shall consist of: (1) the charter members; (2) all men who are commissioned by the states or territories as mine inspectors; (3) all persons commissioned by the federal government for the purpose of coal mine investigation and inspection.

Section 2. All persons, including charter members, shall pay to the secretary of the institute the sum of five dollars (\$5.00) for an initiation fee. Such payment by charter members must be made prior to September 1, 1908, and by every applicant for membership at the time of his election.

Section 3. The annual dues of all the members shall be five dollars (\$5.00), which will become due and must be paid to the secretary of the institute on or before the date of the annual meeting.

Section 4. At the close of each meeting all members whose dues have not been paid shall be dropped from the roll.

Section 5. Applications for membership having been made in writing to the secretary of the institute, the applicant shall at the annual meeting be accepted as a member in full and regular standing, upon the presentation of the proper credentials and the payment of the initiation fee.

Section 6. All applications for membership made to the secretary of the institute prior to September 1, 1908, and accompanied by the proper credentials and the initiation fee shall entitle the applicant to be enrolled as a charter member of the institute, provided the applicant is otherwise eligible for membership.

Section 7. Members upon retirement from office as inspectors, or ceasing to be identified with the work that made them eligible for membership, shall become honorary members of the institute upon application for such membership, and shall then be subject to one-half the annual dues.

ARTICLE IV.—OFFICERS.

Section 1. The officers of this Institute shall consist of a President, three Vice-Presidents, a Secretary, Assistant Secretary, Treasurer and an Executive Board, consisting of one member from each of the states or territories, including the District of Columbia, represented in the membership of the institute; provided, that for states having more than five (5) inspectors enrolled a proportionate representation shall be given those states on a basis of one member of the Executive Board for each five (5) inspectors or major portion thereof enrolled.

Section 2. The officers proper shall be elected by ballot at the annual meeting of the institute and hold their office for one year, or until their successors are elected. The members of the Executive Board shall be selected by the members of their respective states or territories.

ARTICLE V.—ELECTION OF OFFICERS.

Section 1. The following is to be the rules for election of officers for the year 1909 and thereafter:

Section 2. The Executive Board will select one of its members from each state to perform the duties of a nominating committee.

Section 3. Three tellers will be selected by the members present at an annual meeting, to count the votes.

Section 4. Sixty days prior to the annual meeting the Nominating Committee shall prepare a ballot and nominate all candidates for office.

Section 5. Members who desire to enroll as candidates shall place their names in the hands of the members of the Nominating Committee from his state before the date mentioned in Section 4, Article 5.

Section 6. The Secretary shall mail to all members in good standing a ballot, ballot envelope, and return envelope, not later than thirty days previous to election.

Section 7. (a) A member on receiving a ballot shall write yes or no after the name of the candidate he desires to vote for, or insert the name of any other member in good standing. (b) He shall place the ballot in the envelope marked "Ballot," after first carefully sealing it. (c) The ballot envelope shall be inserted in return envelope, which is addressed to the Secretary, and on the left end of the outer envelope write his name and address plainly.

Section 8. No ballots to be received after 12 M. on date of annual election.

Section 9. The Secretary shall present all ballots, unopened, to the tellers, who shall perform the duties of opening and recording the votes in the presence of the members in session in the following manner: (a) Before breaking the seal of the outer envelope, one teller shall read the name of the voter to the Secretary, who shall determine if the voter is in good standing; if so, the envelope is opened, the ballot envelope withdrawn and set aside; if not, the whole envelope and contents must be destroyed unopened. (b) After selecting the ballots of those entitled to vote, the ballot envelope shall then be opened by one teller, read and recorded by the other two. (c) After the entire vote has been recorded the teller shall determine the candidates who have received the most votes and such shall be determined elected for the respective offices. (d) The tellers will then make a report to the institute signed by them, and present same to the President, who shall read it, and so announce the result of the election to the institute.

ARTICLE VI.—DUTIES OF OFFICERS.

Section 1. The President shall preside and maintain order at all regular and special meetings of the institute, and all sessions of the Executive Board. He shall appoint all regular and special committees—if any be necessary—and make it his special duty to promote harmony and good feeling among the members of the institute.

Section 2. The Vice-Presidents of the institute shall assist and co-operate with the President, and in the absence of the latter from any meeting of the institute they shall preside at such meeting in the order in which they are named and perform such other duties as devolve on said President.

Section 3. The Secretary shall attend all meetings of the institute, regular and special, and shall take notes or minutes of the proceedings thereof and transcribe the same in a journal kept for that purpose. The Secretary shall be the custodian of all papers belonging to the institute, and shall render an accurate account of such papers. He shall pay to and take receipt from the Treasurer for all money paid by him to the Treasurer. He shall conduct any and all correspondence relative to the affairs of the institute, under the direction of the Executive Board.

Section 4. The Assistant Secretary shall, as his title implies, assist the Secretary in the performance of the duties of the latter and officiate for him in his absence.

Section 5. The Treasurer shall receive and hold in the name and in trust for the institute all moneys paid to him by the Secretary or received on other accounts. He shall pay out such amounts as may be ordered from time to time by the vote of the Executive Board in defraying the expenses of the institute. Such payments shall be made only by checks properly signed by himself and countersigned by the President of the institute. The Treasurer shall keep an accurate account of all moneys received and disbursed, and have such accounts properly balanced each year and in readiness to be audited by the Executive Board at or just prior to the annual meeting of the institute.

ARTICLE VII.—MEETINGS.

Section 1. The annual meeting of the institute shall be held each year, beginning on the second Tuesday of June at such place as is designated at the time of the adjournment of the previous annual meeting.

ARTICLE VIII.—AMENDMENTS.

Section 1. The Constitution and By-Laws of the Mine Inspectors' Institute of the United States of America may be amended at any regular meeting of the institute by a two-third vote of the members present.

ARTICLE IX.—RULES AND ORDER.

Section 1. All sessions, deliberations and conferences of this institute shall be held behind closed doors, and no one shall be permitted to enter except members entitled to do so under the provisions of the constitution.

Section 2. Provided, however, that rules may be suspended by a two-third vote of the members present for the purpose of receiving, entertaining, or being addressed by any person, on any topic relevant to the objects and purposes of this institute, as outlined by this constitution.

Section 3. On the retirement of the visitor or visitors, regular business may again be resumed, and not before.

Section 4. Any and all members are hereby forbidden to give any information of the doings, business, acts or work of this institute to any person or parties for circulation or publications, or for the purpose of gratifying curiosity.

Section 5. That newspapers or other periodicals of publication approved of by the President and Secretary shall receive such information regarding business done by this institute from time to time, and that such information so given must be by them, and that they be held responsible to the institute for the accuracy of all such statements.

Section 6. Whenever it shall be shown to the satisfaction of this institute that any member or officer has violated any part of this article he shall be dismissed as a member, his name taken from the roll, and such action spread upon the minutes.

Section 7. The name of such offender shall not be considered again for membership for a period of three years from the date of his dismissal.

Section 8. This article and all its sections shall become operative September 1, 1908, and thereafter.

ARTICLE X.—ORDER OF BUSINESS.

To govern the meetings of the institute the following shall be the order of business:

1. Roll call.
2. Reading and approving minutes of previous meeting.
3. Report of committees.
4. Communications to the institute.
5. Unfinished business of previous meeting.
6. New business.
7. Appointment of committees.
8. General discussion for the good of the institute.
9. In the event of a dispute in regard to a decision in parliamentary law, Cushing's Manual shall govern.
10. No one shall be allowed to talk over ten minutes on any subject without special consent of the institute, nor talk more than once on the same subject until all members have had an opportunity to speak.
11. Meetings shall convene at 9 o'clock A. M. and adjourn at 12 o'clock noon; meet at 2 o'clock P. M. and adjourn at 5 o'clock P. M.: evening sessions may be held when considered necessary by the institute.
12. Installation of officers shall be made at the close of the session of each annual meeting.

ACCIDENTS IN COAL MINES.

An Essay Read by David J. Roderick, Inspector of Mines for the Anthracite Field, Pennsylvania, Before the Mine Inspectors' Institute of the United States of America, Indianapolis, Ind., June, 1908.

It has been with considerable interest that the writer has read the almost innumerable editorials, and articles of various kinds, in daily, weekly and monthly papers, commenting upon the recent mine disasters in this and other states, and all in a more or less degree attempting to clear up the case by profound scientific reasoning on the geological formation of the earth's crust at this particular spot, or that these particular mines were in a certain longitude and latitude, and on this account certain climatic conditions were favorable to explosions, whether dust or gas is not stated. We presume, however, they refer to gas explosions, though perhaps both are included by atmospheric changes. These and hundreds of other equally plausible reasons have been advanced; some given by practical men, others given by eminent theoretical men. But after all the "expert" ideas have been advanced and volumes written by college professors, mining engineers and geologists, the real cause was perhaps never touched upon, as in all probability it was some violation of a minor provision of the law on the part of one, or several in succession, who were killed along with the others. One practical Ohio superintendent, in a well-written article in *Mines and Minerals* for February, says: "Ninety per cent. of our explosions are due to a haphazard, devil-may-care system of mining coal, as we are mining it today in this country. Lack of discipline, unsystematic work and failure to enforce the mining laws, in connection with a get-the-coal-out, never-mind-the-law sort of a spirit, is where our chief trouble lies." There is a great deal of solid common sense in this expression, and evidently is based on years of close practical observation, and even though it should appear to be a little too strong, the speaker speaks his words with a lucid, brief, practical ring that is refreshing compared with the long-drawn-out platitudinous dilations of most "experts." It is, not, however, with these periodical heartrending calamities that blot out three to four hundred precious lives at once in some hitherto well-regulated mine, and which very naturally arouses the sympathy of the country and calls forth state and federal investigations and subsequently legislation with a view of preventing a recurrence of the direful events, that we pretend to deal with in this article, but with those daily occurring family calamities that occur from various causes in our coal mines, and particularly to those that are caused by falls of rock, slate, boney and coal, for this is a most prolific source and individually causes as much heart anguish and sorrow, and perhaps more suffering to those left, than is caused by the havoc of a catastrophe, for in one case universal sympathy is aroused and all in the power of good people is done to render the burden as light as possible, but when an accident resulting in the death of one or two occurs in any of our coal mines, a brief notice is perhaps inserted in the papers stating that Mr. Blank, a laborer, was instantly killed in Smith's mine today. He was loading a car after the miner had gone home, when a slab of rock suddenly fell upon him. Or it may be David Blank, a miner, instantly killed by a bell rock just after going into his place to work this morning. In each case a wife and several children are left. In these cases none but the immediate relatives feel or are seriously affected thereby, and the matter is soon forgotten, as little comment is made by anyone at the time. But at the beginning of each year, after the figures have been given by the proper parties, usually the inspectors of each

district in the state, and the total is seen to be appalling, there are the customary comments, suggestions and recommendations; also urgent solicitations for more effective legislation to safeguard those employed in mines. These annual outbursts of eloquent pleadings usually continue for eight or nine days then all once more fall back into the same old normal way, and the accidents continue to occur in the same manner for another year, when again the press has another spasm and we read of all the various causes of accidents, great and small. And when hundreds are killed at once, we read editorials on explosions of "black damp," explosions of "white damp," explosions of "coal dust," explosions of "fire damp" and "after damp," etc.

Now, without going into an extended description of these numerous "damps," let it be understood at the outstart that none of them has ever caused very serious explosions, with the exception of what is commonly known as "fire damp" when mixed with certain proportions of air, which will be more fully stated later.

If you will permit the briefest possible description of the properties of the "damps," it will be given, and may prove of some value and interest to you.

In the first place we will take "black damp." This is a gas composed of one atom of carbon with two atoms of oxygen, and is known as CO_2 chemically. It is about one and a half times as heavy as air, and is known as a "heavy gas" and, as a rule, is found in low places, such as dip workings. In fact, it lies near the bottom of a mine road like water, with air slowly circulating above it. It can always be detected with the flame of a lamp before it proves fatal, as the light becomes black and dull, and when there is about eight per cent. of it present in air a light will be put out as effectively as it would if dipped in water; when there is ten per cent. of it in air it will cause death. It is given off naturally in mines, in well-ventilated and poorly-ventilated mines alike, but seldom if ever seen in the former, while always effectively present like all other "damps" in the latter, except, perhaps, "fire damp." It is also produced by combustion of any kind, such as the breathing of men and animals, the burning of lamps and by blasting, and to talk of it as exploding is ridiculous in the extreme.

"White damp" is a trifle lighter than air, is not often found in mines in large quantities, is very dangerous to life, and in a pure state it gives no indication of its presence on the light of a lamp before it proves fatal. It is always the product of imperfect or incomplete combustion, as when two heavy blasts are fired, or from a smouldering fire. It has no color, taste nor smell, will not support life nor combustion, but will burn with a pale blue flame, forming "black damp." It is very poisonous, producing fatal results by breathing air containing one-half to one per cent. Since it is combustible, lights will burn brighter if placed in a mixture of it and air. It is rarely found in mines under ordinary conditions, and chemically is known as carbonic oxide. This is a subtle, hence very dangerous gas, and great care should always be taken to guard against it when fighting mine fires, and especially when going into old workings where a mine fire had once been.

But to get at the real gas that usually does havoc when a large body of it is exploded by contact with light in any form. In the first place, we will state that it is found in abundance in all deep anthracite mines, and consequently at the start, as a rule, great preparations are made by the companies to guard against it by erecting large ventilating fans, as without them no work could be done in gaseous mines, hence what are known as "gassy mines" are the most healthful for men to work in so far as ventilation goes, and under normal conditions it may be said that this dreadful foe of the workmen is

one of their greatest blessings, as the vigilance constantly demanded by it to guard against its subtle dangers promotes the general healthfulness of the mines wherein it is found, but when neglected does great damage.

At this point it may be well to say something of the nature and properties of this gas and its actions when mixed with certain proportions of air. Chemically it is known as light carburetted hydrogen, and contains in its pure state one atom of carbon and four atoms of hydrogen. In weight it is a little more than half as heavy as air, and commonly called "fire damp" and "marsh gas," and is spoken of by miners as "gas," "fire" and "damp." It is confined in the coal measures and sometimes under great pressure, especially in deep mines, and often bursts from the roof, comes out of the bottom, and where there is water on the bottom it makes it bubble, and where given off in great quantities makes a noise like the roar of many waters, as many mine workers in our anthracite mines will testify. Some veins, the roof of which is hard, seamless and massive rock, are literally saturated with it, and it blows out from every inch of its surface and quite frequently "strong blowers" are cut that give off such volumes of gas that cause a suspension of work in that particular section of the mine for a week or two, and even much longer at times, to allow the "blower" to waste its substance on that "split" of the mine air, which carries it to the upcast without in the least interfering with the other sections of the mine.

It is not very often we read of any large explosions of gas in any of our deep and "gassy" anthracite mines, and when one does occur, as now and then they will, the cause can generally be traced to some very material derangement in the ventilation, caused, perhaps, by a fall of roof or other obstruction at some point or other in the short or mile-long air course, which may occur after a very recent examination by those in charge, thus causing a reduction of the ventilating pressure on the face of the workings, and thus allowing a sudden accumulation of an explosive mixture where least expected, and which some one may encounter with a naked lamp. Then again another subtle but important feature to which up to this time sufficient attention has not been paid, in connection with the ventilation of mines, is the effect that atmospheric changes have upon the working faces in a "gassy" mine. Assuming, for illustration, with normal conditions existing in every gaseous mine that a ventilating pressure of five pounds to the square foot of surface, with a barometer reading of thirty inches, or a pressure of fourteen and seven-tenths pounds per square inch constantly needed to press against the exposed surface to prevent an excessive outflow of gas, thus keeping the mine safe. Now, should a fall, say, of one-tenth inch, take place on the barometer, the pressure on all the exposed surface would be reduced, and the outflow of gas would increase in proportion, and the mine perhaps rendered unsafe, hence the vital necessity of having a barometer at each gaseous mine to show the atmospheric conditions, so that the ventilating pressure can be regulated accordingly and the safe condition maintained. This may sound scientifically "bookish" to many, but it is a fact nevertheless. However, some may disbelieve it, but it is proven by old miners who know nothing of science, but have worked in gaseous mines and who mistakingly say on a foggy morning, "The air is very heavy today; look out for gas," as they have learned by costly experience that on foggy days the outflow of gas is greater. No one would assume for a moment that any dangerous bodies of gas would be permitted to accumulate in worked-out or abandoned portions of a mine in operation, but in years many such places become inaccessible, owing to extensive caves, and on heavy pitches all the chambers are inaccessible when once the coal has been drawn and pillars in some cases

removed, hence it is not only impracticable, but utterly impossible to ventilate these, and they are finally securely walled in all gaseous places and shut off from the live workings so far as human skill can do so. In some such places the "old workings" become partially filled with gas, and with every fall of the barometer some of it escapes with the air courses through unseen fractures in the roof, caused by caves that from time to time take place, hence the importance of maintaining a constant pressure at all times.

Now to get back to the "fire damp" once more. As already stated, it is only about one-half as heavy as air and about one-third the weight of "black damp," hence it seeks the highest place in a mine. It is found in holes in the roof, at the faces of pitching places and faces of places that are a "little ahead of the air," and many others. It is always seeking the high places—the inaccessible places. And what a greater convenience it would be if it were only like "black damp," not seeking high places, but rolling from them towards our feet. It has no color, taste nor smell, is a non-supporter of life or combustion, but is combustible, and under ordinary conditions, so say all authorities, it will burn quietly when mixed with three and a half times its volume of air. It explodes slightly when mixed with five and a half times its volume of air, and reaches its highest explosive point where there are nine and a half of air to one of gas; from this point its explosive force diminishes and explodes feebly when it is one to thirteen. It shows plainly in a safety lamp when there is one to thirty of air, and some say it can be detected by a skillful observer when it is one to fifty.

The methods of detecting "fire damp" have been various from time to time, but the one mostly in vogue at the present day is the ordinary "Davy" lamp, and though there have been various so-called safety lamps the most of them have been constructed more or less upon the principle discovered by Sir Humphrey Davy, viz: "That flame cannot penetrate through fine wire gauze in virtue of the cooling power of the wire, unless forced through by a strong current or blast." Without going into an extended description of the Davy safety lamp, suffice it to say that the gauze contains seven hundred and eighty-four square holes or meshes to one square inch, and is made of a wire one-sixty-fourth of an inch in diameter. One-sixty-fourth of an inch—think of it; and the great number of faithful, heroic fire bosses throughout the anthracite district alone who in the early hours of the morning go seeking through the mines for this deadly enemy by the flickering light of this lamp, and when they come to a place where they suspect the foe is lurking, they slowly and carefully draw the flame down as low as possible, then gradually raise it toward the place where they expect to find it, while the keen, experienced eye keeps watch for the foe, and soon his presence is discovered placing a "pale blue cap" over the red light of the lamp in the detector's hand, and instantly he realizes he must be careful and keep his nerve, as he knows that there is but one-sixty-fourth of an inch between him and destruction, and the chances in favor of the foe, as he begins to dance inside of the fragile cage. Gradually ere he, the foe, dances too long, he withdraws, makes note of his whereabouts and proceeds to locate more of his ilk, until all sections of the mine have been examined and true conditions learned, when they return to the proper stations. As each workman enters, proper instructions are given as to what precautions to take until the danger, if any, has been removed. No one unacquainted with the duties of a fire boss can ever adequately realize how important they are, and it is a question whether they have in the past, are at present, or ever will be, fully appreciated and adequately paid.

Now as to "after damp." The most eminent writers on gases tell us it is

composed of most deadly gases, formed by an explosion of "fire damp," and often claims more victims than the explosion producing it, and consists of one volume of "black damp," two volumes of steam (which immediately condenses) and eight volumes of free nitrogen. When coal dust is consumed in an explosion "white damp" will be present also to some extent. The explosive mixture resulting in this poisonous "after damp" is composed of one volume of "fire damp" and ten volumes of air. The oxygen being entirely consumed, there remains but an atmosphere of poisonous gases for those to breathe who may have escaped instant death by the force of the explosion, and unless immediately rescued, their chances of escaping are slim indeed. Hence we read of rescuers coming across bodies of men in different attitudes in one place, all, perhaps, overcome one by one as they reached this particular spot, by a more densely poisonous atmosphere. From a simple experiment made with a view to approximately determine the expansiveness of a mixture of "fire damp" and air, it is said to be about eight times, that is to say that ten cubic feet of an explosive mixture, instantaneously upon exploding, expands to eighty feet, hence the great force exerted, and there is no room for doubt to anyone who has ever entered a mine after a great explosion.

While talking on the force of explosions, let us cite one statement of an English author of mining text-books. In writing of the force of explosions, he says: "The units of heat given out by the combustion of one pound of 'fire damp' in air is about twenty-four thousand, and the mechanical equivalent per unit of heat equals seven hundred and seventy-two foot pounds, so the force developed by the combustion of one thousand cubic feet 'fire damp,' or forty-five pounds nearly, is eight hundred and thirty-three million seven hundred and sixty thousand foot pounds." Who can comprehend it? None. Who can guess it? Only those who are compelled to enter a mine after an explosion, and who see the havoc produced by it. How can this terrific force be dealt with? The only proper solution of the whole matter lies in providing a strong, constant, well-conducted current of air to sweep it away as rapidly as it is produced. Then when this is provided in all mines, even to the extent that it is provided in the anthracite mines, and a thorough, regular sprinkling of water along the main gangways of the dusty mines and at the faces of live workings, perhaps we will not hear so often of explosions of dust caused by a "blown out" shot. The only object of mine ventilation is to circulate sufficient quantities of air through and along the working faces to keep them healthy by sweeping away all smoke, noxious and explosive gases, and all other vitiating materials, even coal dust, but then there would be no coal dust if an effective water system were in vogue.

Now a few words on "coal dust," to which is attributed many of the late calamities, and to which so little seems to be known as yet. According to Sir Fred Abel, "two to two and a half per cent. of 'fire damp' added to a mixture of fine coal dust and air forms an explosive mixture," so in this case there must be fire damp to make a proper mixture.

Mr. William Galloway, an eminent English authority, says that one per cent. of fire damp in a mixture of fine coal dust and air is sufficient to form an explosive mixture, so again we have the ever-present "fire-damp."

Says another English authority: "The coal dust must be present in a certain quantity, and a standard of fineness," which, according to Mr. Galloway, is one pound of coal dust to one hundred and sixty cubic feet of air.

Says another: "From recent events and experiments, it would seem that some coal dusts of a certain fineness and quality are capable of forming an explosive mixture with air without the presence of 'fire damp.'" So we may

well ask what are we going to do with it? Make mud out of it? Coal dust is found mostly on main haulage roads, and is to a great extent formed by coal falling off the cars and getting broken up by the wheels. Deep mines are generally dry, which will effect the igniting qualities of coal dust. The finest dust is deposited on the top of the sills on the projections of the sides of the road. It is carried and deposited in such places by the currents of air. It is also formed by the cutting of coal at the face, and although in less quantities it is nevertheless dangerous.

Some of the methods used in the mines of England for overcoming the dangers due to the presence of coal dust are by water tanks with perforated tube behind, and used as sprinklers; another method is that of pipes laid alongside of the main and other roads, conveying water from some convenient place, such as a lodgment, or column pipe in a shaft. To these pipes valves are attached every fifty yards, and a hose is used to water the road for twenty-five yards on each side of the valve. Another method is to fix a smaller pipe to the valve instead of a hose, just below the other pipe; this small tube is perforated with fine holes. Still another way is to attach a hose to the valve, called a "spray producer." By this means the water escapes in the form of a fine spray, if the pressure is high, and the air current carries the spray and deposits it almost uniformly on the roads. Then again the dust dampened by compressed air and water issuing together from an adjustable spray producer, the water being conveyed by pipes at a high pressure as before, but if sufficient pressure of air is available a high pressure of water is not necessary.

Now as to shot firing in dusty mines—according to the coal mines regulation act: "No shot is to be fired in the presence of dry coal dust, but if the place is dampened for a radius of twenty yards from the shot hole, and no 'fire damp' present, a competent man appointed for the purpose may fire the shot."

Now, as to a "blow out" shot. What is it? It is simply a blast that blows out its tamping and is caused by the hole in which the charge of powder is placed to do some execution being too strong, or too deep, and thus reaching over the solid. It sometimes happens in a gangway that the "squaring up shot" or "rib shot" gets too strong at the back of the hole, and a "short plug" is necessary in front of it, but rather than drill this "plug" the miner thinks he can tamp it hard enough to bring it, but as the shot is fired it makes a sharp sound, and the miner remarks, "That was a tight one," and on going back he finds it has blown "its tamping" and perhaps cracked the coal to the back of the hole, and he now has to drill the plug, which he should have done before. About the only thing that a "blow out shot," or a good shot for that matter, does in anthracite, aside from sometimes, in a gaseous mine, setting the coal on fire, is to make the miner "mad" by blowing its tamping.

Some slight explosions have been caused in gaseous mines (anthracite) by blasting, but in a very "gassy" vein the greatest trouble is caused by the gas which flows from every inch of the exposed face taking fire with almost every shot. In almost every case, however, ample provision has been made to fight the fire by means of water conveyed in pipes along the gangways and to some distance into the chambers, thence by hose to where needed. Wet pieces of old canvas are often used by miners and fire bosses to quench the "fired" gas along the "ribs" and "faces" of chambers and gangways before the coal takes fire.

The writer has never heard of a "dust explosion" occurring in a wet soft coal mine, nor a water pipe system in a non-gaseous anthracite mine. Most of the deep anthracite mines are dry, dusty and gassy. The dust, however, may not be and in all probability is not as fine and inflammable as the dust in soft

coal mines, but the gas is about the same in each. Then, since it is necessary in anthracite mines to have a strong current of air divided into three, four, five or more splits to sweep away the smoke and gases, and in addition to this to have a water pipe system to guard against fires caused by gas, why would it not be an effective preventive of "coal dust explosions" to have those dry mines provided with a complete system of water pipes with valves at regular distances apart, and sufficient hose attachments to keep the dust damp at all times. It would not be a sufficient matter to sprinkle each "room" after it had been "cut" by the machine, thus dampening all fresh dust before a shot is fired.

Among the numerous causes of blown-out shots and windy shots given in one of the best all-around text books on mining generally ever published, this is said: "The tamping may be of such an inflammable and gaseous nature as to become a dangerous factor in lengthening out the flame of a blast by the gases distilled from it under the flame of the blast." Now, taking this for a fact, why would it not be practicable in such dry, dusty and gassy places to use a non-combustible material for tamping, say pulverized stone, enough of which could be pulverized in a week to supply the mine for a long time? This could be conveyed in cars to places most convenient to the working sections. The rock made by drilling holes in tunnels is used by the rock men to tamp the holes. Why not use it in coal? And then this one danger, if not others, from a blown-out shot would be eliminated.

With reference to what people are pleased to call the "foreign element" in our mines, we would like to ask what would the coal operators and our railroads do without it? We would also like to ask if the foreign-speaking people are responsible for many of the accidents, who is it that is responsible for accidents in England, Wales, France, Belgium, Germany and other coal countries to which there is no immigration and only natives of these countries work in the mines? Now, admitting that two-thirds of those killed in bituminous mines by falls are from among those of the following nationalities—Polish, Hungarian, Italian, Slavonian, Austrian, Russian, Lithuanian, Belgian, Swedish, French and Finnish, the other one-third are from among the English-speaking races, viz: American, English, Welsh, Scotch, Irish and German. Now, if it is shown that this number of deaths occur among the "foreign element," and they are attributed to their inability to understand the rules and regulations of the mine, what is the remedy, inasmuch as we cannot do without them? What is to be done with a gang of Italians on a railroad, for instance? Are they not placed under the charge of an English-speaking person, known as a "section boss?" Why not apply this idea to those non-English-speaking people in the mines and place a section boss over the men working, say, in ten "rooms" or "chambers," or, say, in fifteen to twenty, according to the conditions prevailing as to roof, dust and gas? We cannot do without them, hence ways must be devised by the owners of mines to safeguard them until they have acquired a practical and realizing sense of the dangers of mining.

One illustration applied to the hard duties of the fire bosses on their early inspection of the working places will suffice to show how important it is that each man thoroughly understands the orders given by the fire boss, as he calls at the "shanty" in the morning. A fire boss on his "rounds" discovers gas in a place; he does not remove it at this time, but simply makes a note of it in his book, then "fences" it off temporarily by throwing a "tie" across the track at some point and marks on it the word "gas," "fire" or "danger, keep out." The law requires "gassy" places to be fenced off, and this make-shift is often called a fence by the fire bosses, who have, as a rule, too much territory to cover to erect a better one. This, of course, is sufficient, where the men un-

derstand, but has often been the cause of explosions by some who did not regard the warning. English-speaking people have often at times disregarded this kind of a "fence" in old workings or temporarily abandoned places, and caused serious accidents thereby.

Now, if the mine were divided into sections under a deputy or section boss, with specific charge of as many places as he could properly attend to, whose duty it would be to examine the roof, timber and faces as often as the conditions would require, there is no doubt but that a very effective step in mine regulations would have been taken towards lessening the accidents of all kinds in mines. With reference to anthracite mines, such a section boss, or, as the mine law calls them, assistant mine foreman, would be the person to go to the faces of places to make them safe by removing the danger reported to him by the fire boss. He should be a practical miner, and so would know on whom to call for assistance. With such a person in charge of a section of a mine he would soon learn to know the conditions requiring most attention; he would soon learn, also, the habits of each individual miner and would know who was practical and careful, and who was not and who required most watching. In doubtful cases, as to whether a piece of roof should be taken down, or "propped," he could call into consultation the most capable miners. He could see that all the provisions of the law with reference to shot-firing and undermining were enforced. In fact, he would have charge of miners generally as a section boss does of a section of a railroad, and could enforce a rule of promptness with reference to systematic propping in lieu of the prevailing rule of procrastination which is responsible for many of the accidents.

The report of the Department of Mines for the year 1906 shows that out of a total of 557 fatal accidents in and around anthracite mines, 214 were caused by falls, surely a very prolific source of accidents, and the greater number of them are traced to carelessness on the part of the miner, either when he or his laborer is killed. Now, it is only reasonable to suppose with a closer and more systematic supervision of the miners' method of working, this class of accidents would be lessened very materially.

From 1870 to 1885 there were but six mine inspectors in the anthracite region. On the revision of the law in 1885 another inspector was added, and up to 1891, when the law was again revised, the number of mine inspectors was increased to eight. Up to this time and for several years afterwards, or up to 1901, the office was an appointive one, for a term of five years, after a competitive examination before a board appointed by the judges of the respective counties. In 1901 the customary stereotyped annual howl was raised against the mine inspectors and a clamor made for a law making the office elective, to which the boss politicians listened, and a law making the office elective, for a term of three years, was enacted, with a view of lessening the fatalities in the anthracite mines. The father of the mine inspectors' election law, for a term of three instead of five years, made some very strong assertions in favor of his bill before the mine committee on the 24th of April, 1901. Among other things said by him on this occasion in favor of his panacea, as he thought, for the prevention of accidents were the following. "Under the present law there are eight inspectors of the anthracite coal fields. Under my bill which you have just read there will be sixteen, and instead of being appointed by this examining board, and by the governor on the recommendation of this board, they will be elected by the people of the district. Now, the reason we ask for this change is this: The title of the act under which the office of mine inspector is created sets forth that it is for the purpose of protecting the health and safety of the miners employed in the anthracite coal mines. Now, if the purpose of

this act is to protect the health and safety of these miners, the miners of the state of Pennsylvania come before you to ask you to give into their hands the right to select their own representatives who are to see and care for their safety in the mines. Now, I think this is a very just proposition. That for the only reason these men are created is for the purpose of providing for the health and safety of these miners, and these miners come to you as a body and tell you that they think it is for their best interest to have them elected by the people. I think that this committee, in justice to the bill under which it is created, should give them their demands. Under my present bill it gives the right of election into the hands of the people in each district, so the mine inspectors in our county, if this bill should pass (there will be four of them), will know they must be answerable to the miners of our county. They only ask that if these men under the title of this bill under which they are created are to protect their lives and safety, to let them be proper men to have at the head of that department." This bill increases the number of inspectors from eight to sixteen, and the reason of that is this: The reason given is a long harangue on the manner in which one of the inspectors had done his duty on a certain occasion, and dilates at length about accidents and other things which are not material to the present subject. The discoverer of the then expected panacea concludes his speech by saying: "Gentlemen, we are asking you to give us a chance to elect our own representatives, who will inspect our mines and thereby lessen our accidents." The number of inspectors have since been increased to twenty, and let us take an impartial backward glance and compare the accidents of two periods of six years each. The first period beginning with 1895, and ending with the year 1900, when there were but eight appointed inspectors, not elected you will bear in mind, as the election of mine inspector was the hitherto untried but highly recommended panacea for the lessening of accidents. The other period includes 1901 and ends with the ending of 1906, six full years' trial of the new law with twenty practical men as mine inspectors, most of them, as formerly, from among the miners themselves, and the only difference between them and their predecessors, in the line of competency, is the fact that they have been elected under the new order of things, and not appointed by the Governor upon the recommendation of a board of examiners, as of old.

In the six years covered by the first period there occurred 2,629 fatal accidents all told; that is, the 58 lives lost in the Twin Shaft disaster are included. During the second period, notwithstanding there was a six months' strike, the number of fatal accidents was 3,127, or 489 in excess of the first period. The ratio of fatal accidents per 1,000 employes is also in favor of the first period.

It is not the object in quoting these figures to find any fault with the inspectors, who, as a rule, are capable, conscientious and faithful, and take more risk and do harder work than many other state officials who are better paid, but to show that some other and more effective legislation is more desirable than the election of mine inspectors, for which so much is claimed at the time the law was enacted, and also to show how groundless are most of the "harangues" against the mine inspectors.

Not a few of the then prominent men were, or appeared to be, in favor of the election of mine inspectors, as it was a measure advocated principally by the miners and their leaders, and was enacted more on the spur of the moment than after calm and deliberate consideration, and was done, as one very prominent man said before the strike commission, "to take it out of politics."

We wonder if the commissioner of the Federal Department of Mines will be elected or appointed. Will he be a farmer, or lawyer, or will he be a man with

a practical knowledge of anthracite and bituminous coal mines? If the latter he will surely recommend the repeal of the would-be panacea by election and have the inspectors appointed once more, not for three years, but for ten years, at a salary of at least \$4,000 per year, which would make it worth while striving for and the office a credit once more to the state of Pennsylvania, as the appointed, practical commissioner of the Federal Department of Mines will be. It has been proved beyond a doubt that increasing the inspectors from eight to twenty in the last six years, and taking them from the miners themselves by election, has not been productive of better results; that a State Department of Mines is enforcing the laws in a strenuous manner, and the accidents continue to occur, and now that a Federal Department of Mines is about to be created, to have a general supervision of all the mines in the country, with a view of lessening the number of direful accidents, and, though doubtful, let us hope it will succeed. Should this still prove inadequate, let us then install the section boss as already intimated, and trust he will prove as beneficial to the mine owner as he does to the successful railroad president.

DUST EXPLOSIONS IN NON-GASEOUS MINES.

A paper read by John Verner, Mine Inspector for the State of Iowa, before the Mine Inspectors' Institute of the United States of America. Indianapolis, Ind., June, 1908.

The recent explosions in mines in West Virginia, Pennsylvania and Alabama again emphasize the pressing need of a thorough investigation of the initial causes of these disasters by the best talent in the United States available for such work.

It is probable that an investigation of mine explosions will soon be undertaken by the technologic branch of the United States Geological Survey, and there is reason for the belief that the experts conducting the investigation and carrying on the experimental work will be able to provide the proper solution for the practical elimination of mine explosions. They will be in possession of the results of the extensive investigations of commissions of experts in the European coal mining countries, they will have the advantage of further discoveries relating to explosions since these commissions made their reports, and they will have the additional advantage of unequalled opportunities for research and successful work afforded by the widely spread coal fields of the United States with their varying conditions. They will command the valuable assistance of the mining bureaus of the different states and undoubtedly will have the benefit of suggestions and views of all who have investigated the subject in this country. It is to be hoped that these experts will soon be at work.

The following article deals only with so-called dust explosions in non-gaseous mines (mines free from fire damp) and is made specific in this direction, in order to bring out certain features peculiar to them, and to avoid possible confusion and misunderstanding.

If the reliable records of all dust explosions that ever occurred in non-gaseous mines were available and could be examined, I believe that they would disclose the fact that these explosions invariably occurred in satisfactorily ventilated mines, or that they at least originated in the satisfactorily ventilated parts of them. In my investigations I have found this to be so universally the case that it seems to justify the statement that the occurrence of a dust explosion in a non-gaseous mine may be considered positive proof that the mine, or that part of it where the explosion originated, was efficiently ventilated. In comparing the actions and effects of scores of dust explosions, I have found that the most extensive and the most destructive occurred in mines where the ventilation was exceptionally good and the air current of great volume, and yet, in the face of such proof, readily obtainable by all who desire to look into this feature, there are men who still insist that dust explosions can be eliminated by increasing the air volume going through the mines. The three Pennsylvania mine inspectors who investigated the Monongah explosion were entirely right in stating in their report that "powerful fans and the circulating of large volumes of air will not prevent dust explosions." What more convincing proof that these advocates of increased ventilation are mistaken can be submitted than the fact that dust explosions in non-gaseous mines almost altogether occur during the colder months of the year, when mine ventilation reaches its greatest efficiency?

This brings up the very interesting question as to why dust explosions in non-gaseous mines are almost entirely confined in their occurrence to the colder months of the year. It is an important question and it has possibly not received the attention it deserves. The most general explanation given to ac-

count for this peculiar feature is that the mines in the winter season are very dry and dusty, due to the constant absorption of moisture by the cold air entering and traveling through them. It is assumed that the dry dust particles are easily raised by even a slight commotion in the air current and thus furnish the ready and highly inflammable material to extend the small flame from a comparatively insignificant local explosion to tremendous proportions. There may be some truth in this explanation, but I believe that I shall be able to show further on that its full acceptance is unwarranted.

I do not underestimate the influence of coal dust, containing a high amount of volatile matter, in increasing the scope and magnitude of an explosion. I fully appreciate the fact that dust of that character, moist or dry, is an extremely dangerous material in the presence of heat and flame, yet I am of the opinion, paradoxical as it may appear, that coal dust should not be considered the prime factor in a dust explosion in a non-gaseous mine. Six years ago I made the statement in the report on "Mine Explosions in Iowa" that "Next to the explosion of powder itself, the most influential factor in these so-called 'dust' explosions is pure air near its place of origin. It is the energizing element and without it disastrous explosions in Iowa mines would become an impossibility. Shots may blow the tamping, and dust may be present in abundance, but both will remain comparatively harmless if the mine air is impure." Nothing has occurred since I made this statement to change my views in this respect, but the results of continued observations and investigations during the last six years warrant me in reducing the above general statement to the more specific one, that before a dust explosion of considerable extent can occur the air current in the locality affected by it must not only be fairly pure as a whole, but it must be especially pure and free from vitiation in the lowest stratum or the part traveling close to the floor of the mine workings, for, as will be explained later on, from that stratum mainly must come the air supply necessary to determine and sustain its force.

A very large number of dust explosions have occurred in non-gaseous mines in the United States in the past, yet the most diligent search has failed to show any authentic record that even one of this great number ever occurred in the summer time. The explosion record of Iowa covering the last twenty years shows that all the explosions in that state during that time occurred from October to March, the earliest occurring on October 22nd, the latest on March 11th, and more than half of them (ten) during the months of January and February. It is well known that no fire damp was ever found in the Iowa mines.

We know that a greater degree of moisture prevails in the mines in the summer than at any other time of the year, yet that fact alone surely cannot account satisfactorily for the persistent absence of these explosions during the months of June, July and August, when it has been clearly established that the presence of considerable moisture in the mines in winter has failed to prevent their occurrence. Considering all this, and recognizing the fact that blown-out shots, etc. (the primary cause of explosions in non-gaseous mines), are as frequent in one season as in another, what is there left but the conclusion that the status of the mine air must have a potent influence in the promotion or prevention of these explosions? Their existence depends upon combustion and combustion depends not only on the availability and kind of the combustible material, but, also, to a very considerable extent, on the volume and condition of the air. The mine air is in its purest state in the winter and the pronounced natural ventilation prevailing in the mines at that time of the year not only increases the air volume, but adds materially to the purity of its

lowest stratum. In the summer time the air volume going through a mine is generally less than in winter, the supply of oxygen is appreciably decreased, the air is less pure, and on account of the almost entire absence of natural ventilation the lowest stratum of the current, especially in the live workings, contains the greatest amount of vitiation. The first condition readily promotes combustion, the latter retards it; the one makes an explosion possible, the other prevents it.

Natural laws are fixed laws and cannot be changed to suit the occasion. If we open the door of a heated room in the winter time we find that the heated air flows from the room through the upper portion of the opening, the velocity of the entering air being increased or decreased according to the temperature in the room and outside. We know that in order to promote rapid combustion of fuel and quick generation of heat in the fire box of a boiler the air must be drawn from below through the bars of the grate into the fire, and we further know that the purer the air so admitted and the higher its amount of oxygen, the better and more rapid the combustion, other conditions remaining the same. This is always the case, for the actions and behavior of the elements are governed by Nature's unchangeable law, a law that even the most violent mine explosion cannot set aside.

Recognizing the truth of the above we may then reasonably conclude that at the very beginning, as soon as a sufficient amount of heat has been developed by a blown-out shot or through some other cause, to permit this heat to exert its influence on its surroundings, there will be an inrush of air along the mine floor toward and under the heat wave and flame, this inrush carrying with it the dust in its path, injecting the dangerous fuel into the heat and flame above, providing the necessary oxygen for its combustion and thus starting the explosion on its way. We may further reasonably conclude that this inrush of air and dust along the mine floor will continue in a more or less marked degree during the entire course of the explosion.

It may be pointed out, however, that the very great pressure developed by an explosion will make any air movement from an outward direction towards it impossible. At the first glance this may appear a plausible proposition, but a closer examination of the situation will readily establish its fallacy. We know that the exceedingly high pressure preceding the heat and flame area of an explosion is met by a correspondingly high resistance. We also know that the direction of air movements is determined by difference in pressure and in temperature. Even during the progress of an explosion the air in the territory it affects, will move from the point of highest pressure towards points of lower pressure, and from the point of lowest to point of higher temperature. The point of highest pressure in an explosion is located just in advance of the heat and flame, with the points of lower pressure ahead and to the rear, while the lowest temperature is found nearer the floor of the mine passages. Under the circumstances, and in conformity with natural law, an inrush of air along the lower portion of the mine passages towards and into the heat area of an explosion is, therefore, inevitable.

The theory that the flame of an explosion projects itself into the dust ahead of it, and thus extends the explosion's scope, appears extremely faulty. It suggests a sort of stationary condition of the suspended dust, or otherwise its acceptance must be based on the assumption that the explosion's flame moves faster than the dust, or, in other words, faster than its own explosive force. It would seem that argument is not required to show the apparent impossibility of it. If it is assumed that dust and flame move with about equal velocity, and that there is no inrush of air and dust, what chance will there be for the exten-

sion of an explosion, with the fuel and the air to burn it receding with a speed commensurate to that of the advancing flame?

The existence of this inrush of air during the progress of a dust explosion rests not on theory alone. If any non-gaseous mine, just after the occurrence of a dust explosion in it, is examined with the view of discovering evidence of the existence of this inrush, it will be found that there are three features present in a more or less marked degree, which will furnish reasonable proof that the inrush of air along the floor of the mine passages existed during the explosion's progress.

The first feature is the presence of an abnormally high per cent. of ash in the dust particles exposed to the heat and flame of explosion. For instance, the samples of coal and dust taken from the Winter Quarters Mine No. 4, at Scofield, Utah, after the explosion, gave the following results:

Analysis of coal unaffected by the explosion:

| | |
|-----------------------|------------------|
| Water | 3.33 per cent. |
| Volatile matter | 42.67 per cent. |
| Fixed carbon | 49.06 per cent. |
| Ash | 4.94 per cent. |
| | <hr/> |
| | 100.00 per cent. |

Analysis of soot from face of main entry:

| | |
|-----------------------|------------------|
| Water | 1.74 per cent. |
| Volatile matter | 18.72 per cent. |
| Fixed carbon | 45.30 per cent. |
| Ash | 34.24 per cent. |
| | <hr/> |
| | 100.00 per cent. |

The materials consist of soot mixed with partially coked coal and foreign mineral matter.

Analysis of material on post:

| | |
|-------------------------|------------------|
| Water | 1.69 per cent. |
| Volatile material | 17.77 per cent. |
| Fixed carbon | 47.76 per cent. |
| Ash | 32.78 per cent. |
| | <hr/> |
| | 100.00 per cent. |

Material is largely soot, inclosing particles of coal, coke and mineral matter.

This shows that most of the charred and coked material comes from the mixed accumulation of coal dust and other mineral matter generally found on the mine floor, and while the presence of the high per cent. of ash does not by itself establish the existence of the inrush of air, it fairly indicates the main source of the dust supply for the explosion, and that is of importance when considered in connection with the other features.

The second feature consists of the sometimes quite large deposits of soot, charred and coked dust found adhering to the sides or ends of cars, timbers, tool boxes, etc., facing away from the direction from which the explosion came. The most generally accepted explanation of this peculiar feature is based on the assumption that after the explosion has run its course in one direction it

reverses itself and returns in its original path in the opposite direction, and that the deposits of soot and coked material above mentioned are due to this retrograde movement.

When we know that a dust explosion in a non-gaseous mine depends for its existence and extension on the presence of a plentiful supply of pure air, when we have the well-established proof that such explosion, even in its outward course, will avoid the part of the mine containing vitiated air, and when we then take into account the foul and greatly diminished air supply left in the wake of the explosion, we must conclude that a reverse dust explosion is impossible. Men have been rescued after explosions in mines in Iowa who were right in their course and a number of them were burned so severely that they died on account of their injuries shortly after their rescue, yet none of these men experienced a reverse explosion either with or without flame. Is there a more reasonable explanation for the presence of these dust deposits on the sides and ends of cars, tool boxes, etc., facing away from the explosion, than the acceptance of the existence of the inrush of air and dust along the mine floor towards, into and beyond the explosion's heat and flame area? It is a significant fact that these dust deposits are heaviest on the parts of cars, boxes, etc., nearest the mine floor.

The third feature presents very strong evidence of this inrush of air along the mine floor. The investigations of dust explosions of the more violent type have developed unmistakable signs in parts of the mine of the presence of two forces that had been exerted in opposite direction. The twisted rails and the fragments of cars, etc., scattered in different directions not only tend to show that these forces moved in opposite directions, but that they moved in opposite directions at the same time. The latter condition must have existed, for there is no other evidence of the existence of the twisting or cyclonic force to which the fragments of cars, car irons, axles, etc., had been subjected.

As this display of forces moving in opposite directions is less noticeable in the smaller explosions, it appears that the velocity and power of the inrush of air is proportionate in a measure to the speed and intensity of the explosion itself.

The unchecked frequency of dust explosions in non-gaseous mines in recent years, and right up to the present time, shows that the remedies for the prevention so far proposed and tried in this country have proved entirely inadequate. I believe the principal reason to account for the unsatisfactory and disappointing results in this respect is that our efforts so far have been mainly in the wrong direction. We have been endeavoring to provide remedies to subdue the effects of these explosions when we should have tried to get at the root of the evil by first attempting to eradicate their primary cause.

If it is good strategy in war to find the point of greatest weakness in the enemy's lines and then attack that point, so is it good sense that in our efforts to stop explosions we should determine first their weakest spot and then concentrate our attack in that direction. All attempts to prevent the occurrence of dust explosions in non-gaseous mines by increasing the air volume in them have failed and will continue to fail, for a conflagration cannot be subdued by an increased admission of air. If we desire to accomplish prevention through the manipulation of mine air, we must go to the other extreme and make it so foul that it cannot possibly sustain combustion. A year or two ago somebody proposed as a preventive measure the filling of a mine just before firing time with black damp, artificially induced, the shots to be fired by electricity and

the black damp afterwards to be removed by brisk ventilation. The proposition is right; dust explosions could be prevented in that manner, but the remedy is useless because its practical application is out of the question.

The effort to prevent these explosions through the partial removal of the dry dust from the mine workings and through sprinkling have proved also unsuccessful. Sprinkling the dust, even if the work is systematically done and with care, cannot be relied upon as a preventive; actual experience has proved this fact. The dust tests made in the presence of the jury which investigated the Monongah disaster showed that the moist condition of the dust can have little, if any, influence in checking an explosion's progress. In any event, and especially if the views expressed in this article regarding the inrush of air at the beginning of or during an explosion are accepted, it may be definitely stated that nothing short of complete inundation of the dust on the floor of the mine workings promises to give a reasonable measure of protection, but the impossibility or extreme difficulty of accomplishing this in naturally dry mines makes the remedy in such mines unavailable.

But there is a weak spot in the makeup of these explosions, and I believe a concentrated and determined attack on it will demonstrate that there is a practical way of prevention. That weak spot is the use of flaming explosives, especially blasting powder. Their use has been primarily responsible for all explosions that have occurred in non-gaseous mines in the past, and it should and can be discontinued in all mines where the coal is high in volatile matter and the dust therefore a dangerous element. The removal of the main cause, together with other additional safeguards as may be provided, will certainly make the future occurrence of a dust explosion in a non-gaseous mine a very remote possibility.

THE DUTIES OF THE FEDERAL AND STATE GOVERNMENTS IN RELATION TO THE MINING INDUSTRY.

(By Geo. Harrison, Chief Inspector of Mines of Ohio, at the meeting of the American Mining Congress, Pittsburg, Pa., December 4, 1908.)

In a city renowned as the center of one of the greatest mining industries in the world, and addressing an audience composed of governors of various states, or their direct representatives, United States senators, congressmen and many other eminent statesmen, officers and members of the American Mining Congress and United States Geological Survey, scientific, technical and practical mining experts, mining engineers, mine inspectors and many others assembled to promote mining interests and no doubt endeavor to devise ways and means whereby the enormous list of fatalities can be reduced and greater protection given to life and limb of those employed in the mines in this great mining country, we are forcibly reminded that the dreaded season of the year is at hand when, lifting our morning newspaper, we hold our breath, fearful that our vision may fall on some news item announcing in large head lines, "Great Mine Explosion and Appalling Loss of Life."

One year ago, when a number of mine calamities followed in the wake of each other with such rapid succession and great loss of life, the human sympathy of the people of all classes was aroused beyond description for the bereaved and sorrowing wives, children and relatives, whose means of maintenance had been so suddenly cut off by the sad fate of their bread-winners.

A portion of the general public, often more ready and capable of tearing down than of building up, without considering the unprecedented prosperity, the rapid development of mining properties, the great demand for and increased production of coal, the introduction of mining machinery, the advent of electric power, the changed systems of mining and the incessant influx of utterly unskilled, non-English-speaking labor into the mines, with all their attendant hazards, was cruel and unjust in its unfriendly criticisms of what it termed "incompetent mine inspectors," "indifferent state and federal governments" and "inhuman mine operators," thus dividing the responsibility and rendering their verdict without knowledge of the true conditions and circumstances making such disasters highly probable, if not absolutely certain.

As often repeated in past mining history, the great sacrifice of human life in the mines in so short a time taught its lesson and left its imprint on the minds of all deep and careful-thinking men, especially mining men.

Anxious to learn the cause and devise remedies for such awful catastrophes, a series of very thorough investigations was conducted by scientific and practical experts, and while no definite or final conclusions were reached as to the initial or primary cause of such occurrences, much valuable information was gained regarding the many new dangers incident to new methods of mining and producing coal, the accumulation of which is gradually but surely exposing those who work in the mines to much greater peril. There is very little doubt that the researches referred to had the effect of convincing nearly every one who took a part in them that the most effective way, if not the only way, to avert such calamities, was by the enactment and judicial enforcement of uniform mining laws and customs in every mining state where similar conditions exist. This conclusion is fully sustained when we hear the strong protests and, in many instances, logical arguments advanced by mine operators against the enactment of stringent mining laws by state legislative bodies, not because they are opposed to such laws or do not deem them necessary in the

protection of life, but because any restrictions put upon them that will increase their cost of coal production will practically exclude them from their natural markets in competition with coal from other states, the operations of which they claim are less incumbered with cost-increasing legislation. This argument, whether a sincere one or not, we presume is met with in every state, and is a severe stumbling block in the way of securing much-needed mining legislation.

On June 9th last a gathering of mine inspectors from various mining states convened in the city of Indianapolis and, after considering the seriousness of the situation from increasing fatalities in mines, decided to organize an Institute of Mine Inspectors of the United States, with the object in view of mutual assistance and more complete co-operation and concerted action in securing better and more uniform mining laws. While a movement of this kind is in the right and proper direction, and should be encouraged and sustained, there is no doubt a large number of those who favor it go further and believe that any step in the direction of better and safer regulation of the operation of mines, to be general and successful, should be of a national character, having the moral and material support and carrying with it the impetus of the federal government.

There may be some difference of opinion as to whether representatives of the federal government can exercise any jurisdiction and authority in mines in the various mining states, or what the effect would be on state mining departments, but there is no need for such questions to arise. A Federal Bureau of Mines could do very efficient work by investigations in many directions, and in co-operation with state mining departments, without breaking down any of the state constitutional barriers or in any way interfering with the authority of state mine inspectors in the proper performance of their duties. Standardization and uniformity of methods, customs, respective duties of persons, application of motive power and many other things in connection with mine operation are highly essential, but cannot possibly be accomplished satisfactorily in the various mining states, only through unity of state mining departments and federal co-operation and influence.

The subject of electricity as a motive power in the operation of mines, and the dangers accompanying its application, is becoming one of very serious import, and the diversity of opinion amongst electricians and students on the subject as to methods of application and danger resulting from the various systems are so varied that they are extremely confusing and many of them far from being sustained by actual results.

Many electrical engineers and persons looked upon as eminent authority take the position that a 650-volt system can be applied in mines with "ordinary safety," and that there is little more danger, if any, in persons coming in contact with a 650-volt wire than a 250-volt one.

Last year (1907) about 80 per cent. of the total production of coal in Ohio was produced by electric mining machines and haulage motors. The following quotations are taken from an article headed "Electric Wires," page 30, Ohio Mine Inspector's Report for 1905:

"The careless and unsystematic placing of wires in mines for the purpose of conducting that invisible, deadly power, electricity, and the number of accidents resulting from employes coming in contact with them, is a matter which will sooner or later force itself on the attention of the law-making power of the state and compel the enactment of stringent legislation."

"That electricity as an element of power in the production of coal is not only necessary from a standpoint of competition, but that its

use in every legitimate way in the advancement of civilization is justified, is acknowledged by every progressive man. It is, however, highly essential that the greatest caution be exercised in its application so as to avoid loss of life or injury to persons coming in contact with it."

"There were six fatal accidents during the year, resulting from contact with electric wires in the mines of the state. This may not seem a very large number of fatal accidents, considering the amount of coal produced and handled by electricity, but if proper care and foresight are used in the construction of wires, which can very easily be done, especially in the opening of new mines, this department is of the opinion that fatal accidents from this cause can almost entirely be eliminated. It is also very noticeable that, with few exceptions, the fatal accidents from coming in contact with electricity, are where a higher power of five hundred (500) or five hundred and fifty (550) volts is carried, which also seems unnecessary, as it is fatal to those whose misfortune it is to come in contact with them."

"Some manufacturers of high power electric machinery, and mine operators who desire to use such, may take exception to this department raising the question of limited voltage, but we feel that it is but fair to the 95 per cent. of the mine operators in the state to say that they are successfully operating their mines with a power not to exceed 250 volts, which, in few cases, proves fatal where persons stumble against the wire, and those operators ought not to be charged in common for the loss of life with those who use an unnecessary and excessively dangerous power, and under whose operations these accidents almost exclusively occur."

Until August 10th of the present year there has been no law on the Ohio statute books in reference to the application of electric power in mines.

Taking the tonnage reports of Ohio mine operators, made last January, covering the previous calendar year (1907), out of the total product mined by electric power, less than 10 per cent. was produced by the 500-volt system and over 90 per cent. by the 250-volt system. Last year (1907) eleven men lost their lives from accidental contact with electric wires; eight of them, or 72.8-11 per cent., by the 500-volt wire, and three of them, or 27.3-11 per cent., by the 250-volt wire.

During the present year five men have been electrocuted by coming in contact with live wires, four of them, or 80 per cent., by 500 volts, and one of them, or 20 per cent., by the 250 volts.

These statements are made from careful investigation by the department immediately following the death of each man, and from records in the office, the accuracy of which cannot in any particular be questioned.

We are loath to disagree with our foreign experts (who recently visited this country) on the question of danger from high voltage, and with many expert electrical engineers, and shall certainly not question their judgment, but considering that our mine inspectors have been especially vigilant for three years in having high voltage wires exceedingly well guarded, and that men are very much less liable to carelessly come in contact with high voltage wires, this record is indeed significant, and does not speak very well for the safety of high voltage, convincing us that there must be some mistake in recommending a 650-volt current in mines as "ordinarily safe," unless there is a much safer method of applying it than has yet been demonstrated.

A 250-volt system is acknowledged by most mine operators in Ohio to be sufficient power to successfully carry on the operation of all present-day mines, and, if properly utilized, capable of mining and hauling coal two or three miles underground. The largest and most extensive and best regulated mines in Ohio, having the greatest production of coal, are operated by the 250-volt system and have never had a fatal accident from electric shock.

The secret of high voltage in many cases in our state is simply a question of transmitting electric power into the mines at the least possible cost and having a surplus of power to overcome losses caused by a cheap, careless, defective and dangerous method of conducting it, thus unnecessarily pitting human life against careless and incomplete methods of applying the power.

A number of the fatalities referred to, occurring during the last two years, were from contact with wires supposed to be thoroughly insulated. The present general system of insulating electric wires is a complete failure in mines. It soon becomes defective and is a delusion, and instead of being a protection and safeguard against danger is a danger in disguise.

In four years 33 men in Ohio mines have met death by electric shock, and if the installation of high voltage systems is permitted to continue without the assurance of greater safeguards, the time is not far distant when it will be one of the greatest sources of danger that the miners in every mining state are exposed to. This invisible power is destined to revolutionize mining methods in every mining state, and its legitimate use should be encouraged, but the whole subject of electricity, especially as a motive power in mines, and the dangers incident to its application, should be thoroughly investigated by a federal bureau of mines or commission of scientific and practical experts representing the federal government, and the information gained imparted to those interested in reliable form.

The time is at hand when in a great many mines the lives of the whole force are in the care and custody of every individual who enters the mine. The dangers from gaseous mines, from the excessive use of blasting powder, from blasting coal off the solid, from the great army of unskilled miners, as well as from the carelessness of those in charge of mines and wanton recklessness of employes, are daily increasing and in consequence must augment the roll of fatalities. The cry of competition from mine operators and other causes prevent the securing of necessary uniformity in laws and customs by individual states. The absence of an established central body is a "missing link," an immovable stumbling block in the way of effective concert of action by the various state mining departments.

The only way to bring about the necessary reform without doing injustice to the industry in any state is to seek co-operation with the federal government by and through the establishment of a national bureau of mines, employing the best scientific and practical expert talent that the states can produce, an institution that the various mining states could look up to with pride and confidence and seek information on any or all matters pertaining to mining. Such a bureau, with a staff of good, competent men, or a permanent commission, could make such investigations and collect and compile such information as would be of benefit and interest to the various state governments and those connected with mining.

It is not necessary that such a bureau should be endowed with any power or authority over state mining departments or the operating of mines in any state. It ought to have right of access to mines for the purpose of ascertaining general conditions and securing information for general purposes, co-operate and advise with state authorities regarding needed changes of laws, methods or customs; it should promote the erection and maintenance of experimental testing stations, scientific and practical, and encourage any object that would elevate those connected with the management of mines to a higher standard of efficiency. State governments and state mining departments should be pleased to render any assistance in their power to those connected with a federal bureau of mines.

The question of solid shooting, or blasting coal before being properly prepared, and all its attendant dangers to life and destructiveness to property; the reckless waste of coal by baneful systems of mining and by careless management; the excessive use of blasting powder; the dangers from unskilled labor; the serious results that have occurred and may occur from connecting mining properties; the causes for so many mine catastrophes, and the best way to prevent them, and a great many other matters of equal seriousness are well worth the consideration, and we believe are entitled to the most earnest consideration of every member of our national Congress and Senate.

The mine disaster and such serious loss of life at Marianna, occurring just at the time it did, has cast a pall of gloom over the city and a cloud of solemnity over the proceedings of this congress. While it may not have been the hand of Providence that has ordained it, we trust that the thoughts of the harrowing scenes at the mine and the sorrow of the bereaved ones have left such an impression on the mind of every statesman who has attended this congress that there will be no further doubt about the establishment and maintenance of a federal bureau of mines, and that it may be truthfully written on the tombs of those poor victims, "Lives given up in sacrifice for better mining laws and greater protection to our craftsmen."

On behalf of the members of the Mine Inspectors' Institute of the United States, we desire to thank the officers and members of the American Mining Congress and the United States Geological Survey for their kind invitation to us to attend and take part in their proceedings, and wish to assure them that we are with them, heart and soul, in the inauguration of any movement that will bring greater success to the mining industry, better protection to the miner and more comfort and happiness, with less grief and sorrow, to those dependent upon him.

STATE MINING DEPARTMENT.

Columbus, Ohio, January 27, 1908.

W. K. Field, President New Pittsburg Coal Co., Columbus, Ohio:

Dear Sir—Having been notified by officials of your company that certain places in your No. 6, or Cawthorn, mine, in territory previously condemned by us and by previous administrations, were being cleaned up and offered to the miners, I deemed it my duty to advise with Chief Inspector George Harrison, who in turn called District Inspectors Jones and Morrison of the Fourth and Sixth districts to assist in making another investigation, which was made January 24.

As you are aware, a thorough examination of this territory has been made by every member of the department as it existed in 1905, and a copy of their findings forwarded to you. Mr. Jones and Mr. Morrison having joined the department since that time, the chief inspector desired that they also have an opportunity to pass judgment on the matter in dispute, and after making a careful examination they concur in the report made by their predecessors,

In reaching our conclusions in this matter, we have availed ourselves not only of the wide and extensive experience of the different district inspectors in the matter of dangerous roof, but also of a great number of old and experienced miners who have spent the most part of their lives in that and mines adjacent to your property, all of whom declare that the top in that portion of the mine under discussion is the worst and most dangerous they have ever encountered in their mining experience, and flatly refuse to work in that section of the mine, which position has been re-enforced by President Green of the United Mine Workers, who also made a personal examination, and whose conclusions but confirmed those already rendered by members of this department.

That no injustice should be done your company or employes, or room for reflection be cast on the department, Chief Inspector Harrison has taken great pains to see that a careful and candid examination be made and conditions compared with other sections of the coal field of which your property is a part. In company with that official and officials of your company, visits were made to other mines in Athens county, which but strengthened our belief in the correctness of the position we had taken in relation to the dangerous factors in your Cawthorne mine. We find, also, in the examination of the reports to the department in 1899, that the then chief inspector, R. M. Haseltine, found sufficient cause for suspending that part of the mine, which was reported by the district inspector, Samuel Llewelyn, as abandoned in that year, and remained so until your company attempted to reopen it in 1905. Evidences remain of the efforts to operate that part of the mine at that time in the shape of posts and timbers, of which there seem to have been large quantities employed, but to no avail, the roof falling around the posts and between the timbers before the places could be worked, and in many instances before rooms could be widened out, the roof being of a bastard formation of fire clay and soapstone or tender shale, in addition to large cracks or seams running down through the coal, from which mud or silt would percolate through the upper stratas to the floor of the coal measure in that portion of what is known as the Stalter lease west of the Big Clay vein.

Those slips or seams are found running in all directions through both the roof and coal. Generally their outlines are distinct and easily traced in the

roof, but occasionally some are concealed by a thin scale, thereby increasing the danger to the miner, who may not suspect their presence until too late to properly guard against it. This condition appears to obtain throughout most of the territory west of the clay vein previously mentioned, with these exceptions: Rooms 9, 10 and 11 on the first west off the third south, and rooms 10, 11 and 12 on second west off same south entry, which appear at the face as though they could be worked with ordinary safety. The miners, however, object to working those places, on the plea that it will only be a matter of a few feet more and they will be in the same kind of bad roof, basing their judgment upon past experience, and judging from the surroundings this conviction seems warranted.

We may state in addition to the dangers already mentioned as being present the fact that most of the places attempted to be worked were driven in violation of the breakthrough law, which requires that breakthroughs be made every sixty feet. If this had been done throughout this territory the dangers would have been aggravated on account of the extra width in front of the breaks and the consequent weakening of the pillars and roof. It is needless to say that under the present administration of the mining department those requirements would be rigidly enforced.

In conclusion, we are constrained to believe that the action taken in 1899, in closing down this portion of your mine, was a wise measure for the safety of the men employed, and can see no reason why this course should be reversed. The duties of inspectors make it incumbent upon them to use every safeguard for the protection of life and limb. We believe we would not be exercising the proper care, nor be taking the proper precautions in protecting the lives of employes if we permitted that section of your mine to be reopened.

Yours respectfully,

JAS. PRITCHARD,

Inspector Third District.

Approved by: EBENEZER JONES,

Inspector Fourth District.

THOS. MORRISON,

Inspector Sixth District.

January 28, 1908,

W. K. Field, Esq., President New Pittsburg Coal Co., Columbus, Ohio:

Dear Sir—In addition to previous investigations and inspections of the territory of your No. 6 or Cawthorne mine, referred to in the report of this date made by District Mine Inspectors Jas. Pritchard, Ebenezer Jones and Thos. Morrison, the writer also assisted in the inspection of the 24th inst. and entirely concurred in their report.

The question of the working of this territory of coal, and the dangers incident to it, is becoming one of serious responsibility to this Department. Independent of the ever-increasing and justifiable sentiment in favor of better protection to miners, cool judgment directs that the rapid decrease of skilled, practical pick miners and the very considerable increase of fatal and serious accidents in mines in the state are important factors for us to consider.

This territory of coal may or may not be intersected by very small patches that might be removed with ordinary safety if they could be reached without incurring exceptional risks to life and limb, but the last inspection has convinced us more than ever of the exceeding dangers of attempting to remove the coal in this part of your No. 6 mine, and that we must sustain the District Mine In-

spector in the position he has taken in this instance and in his efforts to prevent the management at this mine from employing men and sending them into this dangerous part of the territory to work, even if we have to appeal to the legal authorities of the state to assist us in doing so.

We are not aware of any known system by which the coal referred to can be excavated with anything like ordinary safety, and regret our inability to suggest any.

Trusting that we will not again be called on to take up this matter, we remain,

Very respectfully,

GEO. HARRISON,
Chief Inspector of Mines.

**CORRESPONDENCE AND ORDERS ISSUED BY THE MINING DEPARTMENT
IN REGARD TO THE OPERATION OF THE POCKOCK MINE, STARK
COUNTY, THE WORKINGS OF WHICH WERE APPROACHING THE
GOLD STANDARD MINE, WHICH HAD PREVIOUSLY BEEN ABAN-
DONED AND CONTAINED A LARGE BODY OF WATER.**

May 19, 1908.

B. Colley, Secretary Local Union No. 1964, E. Greenville, Ohio:

Dear Sir—We herewith enclose you copy of letter sent to the Pocock Coal Co. in which instructions are given in keeping with the verbal order that we gave to them in reference to the drilling of holes as a safeguard against injury from water, either in the Gold Standard mine or any other old workings which they may approach. This is the position taken by the department in all similar cases. There is no law to compel a company to leave any coal betwixt their property and the property of another company, or there is no law that directs the drilling of holes. It is simply an order on part of this Department that in approaching any old workings where there is danger, and after reaching within 100 feet of the line, holes shall be drilled similar to instructions given in this communication.

Very truly yours,

GEO. HARRISON,
Chief Inspector of Mines.

STATE MINING DEPARTMENT, COLUMBUS, OHIO.

May 29, 1908.

Pocock Coal Co., Massillon, Ohio:

Gentlemen—Having called our attention to the wording of our letter of the 15th inst., bearing on the question of danger at your Pocock No. 3 mine, we notice that we failed to repeat the conditions named in the verbal order given in the presence of the representatives of your company and the miners at the meeting held near East Greenville on the 12th inst., and in consequence those who are not familiar with the verbal order may unintentionally misinterpret or misunderstand the written statement. The letter should read as follows.

GEO. HARRISON,
Chief Inspector of Mines.

STATE MINING DEPARTMENT, COLUMBUS, OHIO.

May 29, 1908.

Pocock Coal Co., Massillon, Ohio:

Dear Sirs—Having been called to your Pocock mine, near East Greenville, in reference to differences as to the safety or danger incident to approaching the abandoned workings of the Gold Standard mine, on the 12th inst., we made an examination of that part of the mine approaching the line of the Gold Standard mine, and gained all the information that we could from miners who had worked in the Gold Standard, and from mine bosses who had been in charge of it, and from maps of both mines.

In order to safeguard the lives of those employed in your Pocock mine, and also to protect said mine from inundation and damage, we advise and direct that at present and hereafter, wherever working places in the Pocock mine are

driven within 100 feet of the territorial line of the old workings of the abandoned Gold Standard mine, as shown by the certified maps of both properties referred to, and where it is desired that such working places be continued toward the territorial line, the following precautions must be strictly observed:

That any working place driven parallel with the territorial line and within 100 feet of it must have one (1) flank hole drilled at the nearest corner of the place to the territorial line, and at an angle of about 45 degrees in the direction of the territorial line, the hole to be drilled twelve (12) feet in length. Another hole to be drilled 15 feet in length, started near the same corner of the place and drilled in the direction in which the place is being driven. When a cut of coal has been removed the direct hole must be extended again to 15 feet in length, and a new flank hole drilled twelve (12) feet deep in the same corner before another cut of coal is mined, and so on until the place reaches its destination, or is discontinued working.

We also require that the place running nearest to and parallel with the territorial line be kept at least ten (10) or fifteen (15) feet in advance of any place running parallel with it on the Pocock side of it and coming within the 100-foot limit from the territorial line of the worked-out and abandoned property referred to.

Whenever a working place is being driven directly in the direction of the worked-out territory and is within 100 feet of the territorial line of the Gold Standard mine, there must be three (3) advance holes bored in each place; one direct hole in the center of the place 15 feet in length, and a flank hole in each corner 12 feet in length, drilled at an angle of 45 degrees. After a cut of coal has been mined and removed the leading hole must be extended again to make it fifteen feet in advance, and another 12-foot flank hole drilled in each corner, and so on until such place shall reach its destination or been discontinued.

It is immaterial to this department whether the miners working in these places are entrusted with the drilling of these holes, or if the company employ some person especially to do the work, but we must hold the company responsible to see that these holes are bored in accordance with the above directions, and we consider the circumstances of sufficient importance to advise that the company on this occasion will employ some person especially for this work that they can rely on for seeing that it is done.

We also require that in any other part of your Pocock mine where working places are approaching within 100 feet of the line of any territory known to be worked out, and where gas, black damp or water may have accumulated, the same precautions by advance holes must be used. It is very important that these precautions be strictly observed, both by the management of the mine and by the employees, and information of any violation reaching this department will certainly insure prompt action on our part and prosecution of those who violate the order.

This letter to take the place of and render null and void the conditions named in our letter of the 15th inst. We will be obliged if you will return that letter to this office.

Very respectfully,

GEO. HARRISON, *Chief Inspector of Mines.*

E. JONES, *Inspector Fourth District.*

W. H. TURNER, *Inspector Fifth District.*

THOMAS MORRISON, *Inspector Sixth District.*

W. H. MILLER, *Inspector Seventh District.*

COPY OF NOTICE ISSUED AUGUST 31, 1908.

State Mining Department.

IMPORTANT NOTICE TO BE PLACED IN ALL MINES IN THE STATE.

Columbus, Ohio, August 31, 1908.

To Mine Operators, Mine Superintendents, Mine Bosses and Mine Employees Generally:

The following is an act of the Legislature of last session, and became a law on August 10, 1908.

AN ACT

To protect the lives of persons employed in the mines of Ohio against the dangers of electricity and machinery and providing penalties for violation.

Be it Enacted by the General Assembly of the State of Ohio:

Section 1. That after three months from the passage of this act, in all mines in this state, where electricity is, or hereafter shall be used, as a part of the system, power, or means of mining and producing the coal from any of said mines, that the owner or operator of every such mine shall cause all wires conducting electricity in and about said mines, to be carefully and thoroughly insulated or protected in a safe manner as may be authorized by the state mine inspector, or his deputy, so that persons or animals coming in contact therewith will not be injured thereby. Provided, however, that trolley wires or other wires not capable of insulation shall be guarded by being placed at least three (3) inches deep within a groove or in such other manner as may be authorized by the state mine inspector, or his deputy, whose duty it will be, upon the written request of any mine owner, operator or person employed in such mine, to investigate all such wires that may be incapable of insulation and determine upon any proper method of guarding said wires other than by means of the aforesaid groove. And said inspector shall thereupon issue a certificate to the owner or owners of said mine, setting forth the method to be employed in the guarding of said wires, and keep a record of the same; thereupon within thirty (30) days from date of the certificate, it shall be the duty of the mine owner or operator, to guard such non-insulated wires in the manner required in said certificate.

Insulating
electric wires.

Section 2. In all mines where mining machines are used, each of said machines shall be equipped and provided with a sufficient shield as may be authorized by the state mine inspector, or his deputy, for the protection of those employed in or about the use and operation thereof; and said shield shall be kept in use constantly while said machine is under operation.

Shield for
mining ma-
chines.

Section 3. Any corporation or person violating the provisions of section one of this act shall be fined not more than five hun-

Penalty.

dred dollars, nor less than one hundred dollars; and for the violation of section two of this act not more than one hundred dollars.

FREEMAN T. EAGLESON,

Speaker of the House of Representatives.

Passed May 9, 1908.

JAMES M. WILLIAMS,

Approved May 9, 1908.

President of the Senate.

ANDREW L. HARRIS, *Governor.*

Having been notified by leading mine operators that they deemed it impracticable to comply with the first provisions of the law requiring trenches and insulation of wires, and asking instructions as to the method that would be advised by this Department, a meeting of the inspectors was held during the week commencing August 10th, when the matter was taken up and resulted in the following:

WHERE THE INSPECTOR DOES NOT CONSIDER IT PRACTICAL for trenches to be cut in the roof, or wires to be effectively insulated or protected, as provided in the above law, the following general rules must be observed by those in charge of mines, but these rules may be changed by any district inspector, and special orders given by him to meet local conditions, where he deems it necessary in consideration of the safety to employees:

Discretionary power of mine inspector.

Regulating placing of trolley wires in mines.

Where trolley wire crosses entry.

Where gathering locomotives are used.

Electric wire in rooms.

Regulation of electric power by circuit breakers or switches.

Regulation of mining machine feed wires.

I. That all trolley wires be carried at least six inches outside and parallel with the track rail on the side the trolley wire is located. When regular height is less than 6 feet 6 inches, from top of rail, the lower side of the trolley wire must not exceed five (5) inches from the roof, and less if required by the district inspector, with hangers not to exceed twenty-five (25) feet centers, and the tension sufficient to keep all sag out of wires and prevent trolley wheel from coming in contact with roof and timbers.

II. That all trolley wire branches across entries be trenched or made safe from contact of persons passing underneath them.

III. Where gathering locomotives are used on entries, the trolley wire must be placed on opposite side from room neck.

IV. In no case shall trolley wires be extended into rooms or working places, or track rails be bonded in these places for use of gathering motors or any other purpose.

V. At all mines where there is electric power, the power must be controlled at the mine by switches or circuit breakers, and at all important points in any mine where the mine inspector deems it necessary, switches or circuit-breakers shall be provided to control the current.

VI. That all machine feed wires be placed as near the side and roof as practical; the positive wire to be carried not to exceed three (3) inches from the roof and rib, and negative wire as close to it as practicable. When machine or feed wires are carried in same entry as trolley wire, they shall be placed on the same side, and between trolley wire and rib. All wires in the mines to be placed on suitable insulators. All feed wires crossing places where persons and animals travel must be covered by

rubber hose or thoroughly protected from contact. All safety holes on hauling ways to be on the opposite side from the electric wires and to be kept free from obstruction.

Provision for safety-holes.

VII. If necessary to carry wires down shafts or slopes used as traveling ways, the wires must be thoroughly cased or protected so that persons cannot be shocked therefrom. If this cannot be done, the wires must be removed from such shafts or slopes.

Protection of electric wires in shafts or slopes.

VIII. In no case shall an electric wire be attached to a pipe line in any mine, and all pipe lines must be protected from contact with bonded rails or wires used for conducting power for motor haulage or any other purpose.

Electric wires must not be attached to pipe line. Bonded rails.

IX. That all terminal ends of wires be guarded so as to prevent persons inadvertently coming in contact with them. That no wires be carried beyond the outside corner of the last breakthrough between entries or rooms.

Regulation of terminal wires.

X. In the opening of all new mines, separate traveling ways should be provided and maintained, and in all present mines the same provision should be made wherever practicable; and if such traveling ways are approved by the district mine inspector, the travel of employes should be confined thereto.

Separate traveling ways to be provided.

XI. All ventilating fans operated by electricity to have a direct wire from the generator.

Regulation of fans operated by electricity.

XII. That this department is uncompromisingly opposed to the extension, or even the continuance of high voltage in mines, and believes that wherever practicable, transformers ought to be installed reducing the electric power in mines to not more than 250 volts.

Regulation of high voltage.

XIII. That no running switches be made either by haulage or gathering motors, where men are traveling in or out in mines.

Motors must not make running switches.

PREVIOUS ORDERS REISSUED—DUTIES OF FIRE BOSSES WHERE MINES GENERATE FIRE DAMP.

In all mines generating fire damp there must be a competent person or persons—known as fire bosses—whose duty it shall be to make a thorough examination of every working place in the mine every morning with a safety lamp, not more than three hours prior to the appointed time for the employes to enter the mine. As bona fide evidence of his presence there, the fire boss shall on every visit leave his initials, and the date of the month and day on which the visit is made, marked with chalk on the face of the coal, or some conspicuous place where it can readily be seen by any person entering the place. If there is any standing gas discovered he must leave a danger signal across every entrance to such place, and no person shall be allowed to go beyond such signal of danger until such standing gas has been diluted and dispersed by a current of air, and not by brushing; the dangerous practice of gas being "brushed" out being positively prohibited.

Fire bosses must be employed.

Duties of fire bosses.

Standing gas to be removed by air current and not by brushing out.

No person shall enter the mine until the fire boss makes a report outside the mine on a blackboard for that purpose, arranged where men can conveniently inspect it; he shall also make a written report, which shall be kept in the office, or some

Men shall not enter mine until fire boss reports.

Fire boss shall return and see men started to work.

Old workings to be kept free from standing gas and fenced off.

Mine to be examined idle days and Sundays if any men are required to go in.

Prosecution for removing or going beyond danger signals.

Explosives or working tools not to be taken on cages with men nor carried down or up stairways. Explosives not to be hauled or carried down any place where power is on electric wires.

No person to ride on loaded cars or on motor trips.

place at the mine where it can be seen by the Mine Inspector when called for. The fire boss must return to the mine with the miners and remain there at least one hour attending to the removal of any standing gas and seeing that men are safely installed in their working places. It shall be the duty of the fire boss to see that every part of the mine is kept free from standing gas and that all old workings are properly fenced off as required by law.

The mine must also be examined on idle days or Sundays, if any day men or miners are required to work in any part of it, and if more than three hours elapse between the day turn leaving and night turn starting, the places to be worked by night turn must be examined by some competent person with a safety lamp, and reported safe before persons are permitted to go to them.

Any miner, employe, or other person, excepting the fire boss, removing, or going beyond any caution board or danger signal placed at the entrance of any working place, or to the entrance to any old workings in a mine, will be prosecuted by this Department if the information is given to us by the mine foreman or any reliable person.

TRANSPORTATION OF POWDER, EXPLOSIVES AND WORKING TOOLS INTO THE MINES.

Powder, explosives and working tools shall not be taken down or up a hoisting shaft in a cage when men are going down or up, neither can they be carried down or up a stairway in a shaft used for ingress or egress.

Blasting powder or explosives must not be taken in or out, or moved from place to place in a mine along any entry or haulway where there are electric wires, while the power is on the wires.

RIDING ON MOTOR TRIPS PROHIBITED.

That no person be permitted to ride on loaded cars or motor, or high-speed haulage trips, unless where, by mutual agreement, a special trip is run for the purpose of taking employes in and out of the mine, which must be run at a slow speed and care exercised according to the necessity for safety.

This department desires the co-operation of all concerned in seeing that the above orders are complied with and must hold mine managers responsible for their compliance.

GEO. HARRISON, *Chief Inspector of Mines.*
 THOS. WATERS, *Inspector First District.*
 EDW. KENNDEY, *Inspector Second District.*
 JNO. L. M'DONALD, *Inspector Third District.*
 WM. C. WIPER, *Inspector Fourth District.*
 W. H. TURNER, *Inspector Fifth District.*
 ALEX. SMITH, *Inspector Sixth District.*
 W. H. MILLER, *Inspector Seventh District.*
 LOT JENKINS, *Inspector Eighth District.*
 THOS. MORRISON, *Inspector Ninth District.*
 EBENEZER JONES, *Inspector Tenth District.*

COPY OF CIRCULAR LETTER ISSUED OCTOBER 5, 1908, IN REGARD TO
AN ACT PASSED APRIL 2, 1903, REGULATING THE SALE AND HAND-
LING OF BLASTING POWDER.

State Mining Department, Columbus, Ohio, October 5, 1908.

To the Manufacturers of Powder:

Dear Sirs—The new law passed April 2 last, regulating the sale and handling of blasting powder to miners and by miners in the mines in this state, is now in force and effect. It provides that:

"All powder sold to miners by the keg shall be packed in kegs which have an opening at the edge two (2) inches in circumference, and that can be conveniently opened to avoid the dangerous use of picks to open same."

All shipments must hereafter be in compliance with this law.

"Section 2. (*Penalty.*) Any person violating any part of this act, shall be deemed guilty of a misdemeanor, and upon conviction be fined, not more than one hundred dollars, nor less than five dollars, at the discretion of the court."

For the purpose of uniformity and convenience, this department advises a screw bung opening within one-quarter inch of the rim of the keg, the bung hole not to exceed one inch in diameter.

Hoping no time will be lost in compliance,

Very truly yours,

GEO. HARRISON,
Chief Inspector of Mines.

NOTICE—NEW LAW. (TO BE POSTED AT MINES.)

State Mining Department, Columbus, Ohio, October 12, 1908.

To Mine Operators and Miners:

The following act was drafted at the instance of the Ohio miners and passed by the last session of the Ohio Legislature, becoming a law on the 3d inst.:

AN ACT

Governing powder, other explosives and blasting in coal mines.

Be it Enacted by the General Assembly of the State of Ohio:

Section 1. [*Storing Blasting Powder or Other Explosives.*] No blasting powder or other explosive shall be stored in any coal mine, and all powder sold to miners by the keg shall be packed in kegs which have an opening at the edge two inches in circumference, and that can be conveniently opened, to avoid the dangerous use of picks to open the same; and no workman shall have at any one time more than one twenty-five pound keg of black powder in the mine, nor more than three pounds of high explosives; and no explosive shall be taken into or out of any part of the mine in mine cars propelled by electric power; and no person shall keep blasting powder, or explosives, dangerously near the electric wire or power cable in any part of the mine where electric wires are in use.

(a) [*Boxing and Distance.*] Every person who has powder or other explosives in a mine, shall keep it or them in a wooden or metallic box or boxes, se-

curely locked, and said boxes shall be kept at least five feet from the track, and no two powder boxes shall be kept within twenty-five feet of each other, nor shall black powder and high explosives be kept in the same box.

(b) [*Handling Explosives.*] Whenever a workman is about to open a box or keg containing powder or other explosives, and while handling the same, he shall place and keep his lamp at least five feet distant from said explosive, and in such position that the air current cannot convey sparks to it, and no person shall approach nearer than five feet to any open box containing powder or other explosives with a lighted lamp, lighted pipe or other thing containing fire.

(c) [*Tamping.*] In the process of charging and tamping a hole, whenever in the opinion of the mining department this becomes necessary, the needle used in preparing a blast shall be made of copper and the tamping bar shall be tipped with at least five inches of copper. No coal dust nor any material that is inflammable, or that may create a spark, shall be used for tamping, and some soft material must always be placed next to the cartridge or explosive.

(d) [*Firing Shot.*] A miner who is about to fire a shot with a manufactured squib shall not shorten the match, saturate it with mineral oil nor ignite it except at the extreme end; he shall see that all persons are out of danger from the probable effects of such shot, and if it be a rib shot, he shall notify the person or persons working next to him on said rib before said shot, and shall take measures to prevent anyone approaching by shouting "fire" immediately before lighting the fuse; no person shall return to a missed shot until five minutes have elapsed. And when it is necessary to tamp dynamite, nothing but a wooden tamper shall be used.

Section 2. [*Penalty.*] Any person violating any part of this act, shall be deemed guilty of a misdemeanor, and upon conviction be fined, not more than one hundred dollars, nor less than five dollars, at the discretion of the court.

Section 3. This act shall take effect and be in force six months after passage.

FREEMAN T. EAGLESON,

Speaker of the House of Representatives.

JAMES M. WILLIAMS,

President of the Senate.

Passed April 2, 1908.

Approved April 3, 1908, 9:50 o'clock A. M.

ANDREW L. HARRIS, *Governor.*

It is not necessary to say that the above law covers a number of very important points, which, if reasonably observed, may result in preventing much loss of life and injury to persons in mines. It is no hardship to anyone, simply a little proper discipline and exercise of necessary care in handling explosives.

Clause (c) provides that: "Whenever in the opinion of the Mining Department this becomes necessary, the needle used in preparing a blast shall be made of copper, and the tamping bar shall be tipped with at least five (5) inches of copper."

The promoters of the law no doubt considered it essential that copper needles and tampers should be used as a safeguard against premature blasts, and loss of life or injury resulting to miners, and every inspector in the department is fully in accord with the law, hence this notice.

That copper needles and copper tips on tamping bars must be provided without any unreasonable or unnecessary delay, and the use of all other material as needles and tip ends of tamping bars dispensed with both by regular miners and by day men and any person or persons engaged in charging any hole, either

in coal, rock, or any other material in any mine in the state, except where the law requires that nothing but a wooden tamper be used to tamp dynamite charges.

(Signed)

GEO. HARRISON,
Chief Inspector of Mines.

STATE MINING DEPARTMENT.

Columbus, Ohio, October 13, 1908.

To the District Inspectors:

Dear Sirs—We are sending you under separate cover a notice of the new law, to be posted at mines. We will be obliged if you will post this notice wherever you think it can be seen by miners, so that everyone will understand our position in regard to the copper needles and copper tips on tamping bars.

We have been urged by a number of operators to name a day when miners would be compelled to have those needles and tamping bars, but we have declined to do that, lest companies and dealers handling them, and manufacturers of these articles, would see an opportunity of running up the price beyond all reasonable limits.

What we desire is that you will do all you can to bring the law into operation and have these safety measures adopted by the miners without any unreasonable delay

Complaint is made to us by some of the inspectors that the miners are very much opposed to the use of those things in some parts of the state, and that they are blaming the Mining Department for this law. While we are not responsible for the law, we believe that copper needles and copper tamping bars should be brought into general use, and the iron or steel ones dispensed with in every particular, and miners, for their own safety, should have no scruples about purchasing and using them.

Very truly yours,

GEO. HARRISON,
Chief Inspector of Mines.

UNITED STATES GEOLOGICAL SURVEY PRESS BULLETIN.
For immediate release.

GEORGE OTIS SMITH, Director Thursday, October 22, 1908 Special No. 5.

PREVENTION OF MINE EXPLOSIONS.

Foreign Experts Make Report to Secretary of Interior.

Washington, D. C., October 22, 1908. (Special.)—The Geological Survey issues today a report on the prevention of mine explosions, submitted by three foreign experts, Victor Watteyne, inspector-general of mines, Belgium; Carl Meissner, councillor for mines, Germany, and Arthur Desborough, H. M. inspector of explosives, England. These engineers have been in the United States for six weeks, coming at the invitation of the United States government to assist the federal authorities in beginning the investigations authorized at the last session of Congress. The report was presented to Secretary Garfield, who transmitted it yesterday to President Roosevelt, stating that the report with its recommendations will be of the highest importance in aiding Congress and the different state governments in providing legislation to insure more efficient and careful operation of coal mines, by the adoption of mining methods and safety appliances that will materially aid in preventing such terrible losses of life as have occurred through mine explosions in recent years.

In view of the fact that this report is the first result of the Geological Survey's scientific and practical study of the conditions under which more than half a million miners work, the President ordered its immediate publication and distribution among the coal-mine operators and miners of the country. The report is addressed to the Secretary of the Interior, and with its recommendations is as follows:

Report.

In response to your request that we co-operate with the United States Geological Survey in the inauguration of its investigations looking to the prevention of mine explosions, and that we submit for the consideration of those connected with the coal-mining industry in the United States such recommendations as experience in our own countries and observation among American coal mines indicates may be useful in providing for greater safety, we beg to submit the recommendations given below.

Since coming to the United States, we have given careful attention to and approve the investigations in relation to this subject begun by the Geological Survey. We have visited typical mines in the more important coal fields of the United States, and have discussed the mining problems with many coal operators, miners and state inspectors.

To be effective, investigations for the benefit of mining must be continuous. The opening up of new mines, the deepening of old mines, the meeting with new conditions, the changing of explosives and the inauguration of new processes and methods will call for continuous investigations, to be followed by continuous educational work.

Our investigations and recommendations relate primarily to questions of safety in mining; but in this connection we have been greatly impressed with another closely associated phase of the industry, viz: the large and permanent loss of coal in mining operations in many portions of the United States.

This is a serious, permanent and national loss. It seems to be a natural outcome of the ease with which coal has been mined in the United States and the enormously rapid growth of the industry.

The active competition among the operators and the constant resulting effort to produce cheaper coal has often naturally led to the mining of only that part of the coal which could be brought to the surface most easily and cheaply, leaving underground, in such condition as to be permanently lost, a considerable percentage of the total possible product. Certainly much of this loss can be prevented through the introduction of more efficient mining methods, such as the long-wall system, more or less modified, the flushing method. (See "H," 7.)

In the preparation of these recommendations we have recognized fully the great differences between the mining conditions in Europe and those in America, where the industry has developed so rapidly that thorough organization has not yet been possible; where a large percentage of the men entering the mine are unfamiliar either with mining methods or the English language; and where the price of coal at the mine is less than half that in Europe. Nevertheless, we believe that these recommendations will be found useful in the further development of the American coal-mining industry for safety and efficiency. The cordial reception everywhere accorded us leads us to believe that these recommendations will be received by the operators and miners in the same spirit of good-will as that in which they have been prepared. But the success of this movement for greater safety and efficiency will depend upon the hearty and patient co-operation of the operators and the miners, working together for the accomplishment of this purpose.

RECOMMENDATIONS.

A. Selecting the Explosives to be Used.

(1) We recommend that the Government of the United States examine the explosives now and hereafter used in mining, with a view to eliminating the more dangerous explosives and to improving and standardizing such explosives as may be considered most suitable for such use, these to be designated by the Government "permissible explosives."

The term "permissible explosives" is suggested for the reason that no explosives are entirely safe, and all of them develop flame when ignited; and we advise therefore against the use in the United States of the terms "safety explosives" or "flameless explosives," as these terms may be misunderstood, and this misunderstanding may endanger life.

(2) We recommend that the operators and miners of coal use only such explosives as are included in a list of "permissible explosives," when the same has been published by the Government, in all mines where there is risk of igniting either dust or gas, selecting that one which their own experience indicates can be used to the best advantage under local conditions.

(3) We also recommend that investigations be conducted to determine the amount of charge of such "permissible explosives" which may be used to the best advantage under different conditions with a view to reducing danger to the minimum.

B. Carrying the Explosives Into the Mines.

(1) All explosives should be made into cartridges and placed in closed receptacles before being carried into the mine, and the quantity carried into the mine during one day by any miner should be limited as nearly as practicable to the quantity needed by him for use during that day. Handling loose explo-

sives and making them into cartridges by an open light in the mine should be prevented.

(2) Detonators or caps should be handled with great care, and should be carried only by a limited number of responsible persons.

C. Use of Explosives in the Mine.

(1) Shooting in or off the solid should not be practiced.

(2) The depth of the shot hole should be less by at least 6 inches than the depth of the cutting or mining. The use of very deep shot holes should be avoided as unnecessarily dangerous.

(3) The overcharging of shots (the use of a larger charge than is required to do the work satisfactorily) should also be avoided as unnecessary and dangerous. The proper standardization of explosives used in coal mining will greatly facilitate the carrying out of this recommendation. (See also "A," 1.)

(4) Shots should never be tamped with fine coal or material containing coal. Clay or other suitable material should be supplied and used for this purpose.

(5) The firing of two or more shots in one working place, except simultaneously by electricity, should not be allowed until a sufficient interval has elapsed between the firings to permit an examination of the working place, in order to see whether any cause of danger has arisen.

(6) Before a shot is fired the fine coal should be removed from the working place, as far as practicable, and the coal dust on the floor, sides and roof, for a distance of at least 20 yards from the place where the shot is to be fired, should be thoroughly wet, unless it has been demonstrated that the dust in the mine is not inflammable. (See also "E," 1.)

(7) If gas is known to occur in the mine, no shot should be fired until, in addition to the watering, an examination made immediately preceding the time for firing, by a competent person, using a lamp which will easily detect 2 per cent. of gas, has shown the absence of that amount of gas from all spaces within 20 yards of the point where the shot is to be fired.

(8) Believing that such will be one of the greatest advances which can be made in safeguarding the lives of miners, we recommend the adoption of a system of electric shot firing, in all mines where practicable, by which all shots in the mine, or in each ventilation district of the mine, may be fired simultaneously, at a time when all miners and other employees are out of the mine.

D. Keeping the Mine Roadways Clean.

(1) The roadways of the mines should be kept as free as possible from loose coal which may be ground into dust and of rubbish in which such dust may accumulate, in order to facilitate the removal and wetting of the dust.

E. Wetting the Coal Dust.

(1) In all coal mines where explosives are used it is desirable, and in all mines containing gas it is highly important, that the dust on the walls, timbers and floors of the working places and roadways should be kept continually wet prior to and during the work in the mine. If, however, conditions of roof or lack of water render this general watering condition impracticable, at least the dust within 20 yards of each shot should be wet before each firing, and other precautions against explosions should be practiced with unusual care.

It is our opinion that a system of watering which occasionally sprinkles the floor only and leaves dry the dust on the walls and timbers of the roadways is useless and is also dangerous in that it may generate an unwarranted feeling of security against an explosion.

F. Special Precautions for Mines Containing Gas.

(1) In any mine where as much as 2 per cent. of gas can be detected by suitable method, only locked safety lamps of an approved type should be used so long as such condition exists or is likely to recur.

All safety lamps should be maintained in good condition, cleaned, filled, kept in a special room at the surface, and carefully examined both when delivered to the miner and when returned by him at the close of each day's work. A defective safety lamp is especially dangerous because of the false feeling of security it engenders.

In the filling of lamps with benzine or other low-flash oils, which should always be done at the surface, special precautions against fire or explosions should be taken.

G. Use of Electricity.

(1) Electricity in mining operations offers so many advantages, and has been so generally adopted, that no reasonable objection can be made to its use under proper restrictions. The electrical equipment, however, should be installed, maintained and operated with great care, and so safeguarded as to minimize danger from fire or shock. The fact that the effectiveness of some insulating materials is soon destroyed in most mines should not be lost sight of.

We recommend the following precautions: For distribution underground the voltage should not exceed 650 direct current or 500 alternating current, these voltages being intended for transmission to machinery operating at 500 volts direct current and 440 volts alternating current, respectively. Even lower voltages are preferable. The trolley wires should be installed in such manner as to render shocks least likely; that is, placed either high enough to be beyond easy reach or at one side of the track and properly protected.

Where current at a potential of more than 650 volts is employed for transmission underground, it should be transmitted by means of a completely insulated cable; and where a lead or armored covering is used, such covering should be grounded.

In all mines having electric installation special precautions should be taken against the setting on fire of coal or timber. Inclosed fuses or cutouts are recommended, and each branch heading should be so arranged that the current may be cut off when necessary.

No live electric wire should be permitted in that part of any mine in which gas is found to the amount of 2 per cent.

In all mines producing gas in dangerous quantities, as indicated by a safety lamp which will detect 2 per cent. of gas, the working places should be examined for gas by a qualified man, using such a lamp, immediately before any electric machine is taken or operated there.

H. Precautions Against Miscellaneous Accidents.

(1) In all new construction, shaft lining and superstructures about the entrance of the shaft (or slopes or drifts) should be built, as far as practicable, of noncombustible materials.

About the entrances to mines every possible precaution should be taken to prevent fires or the injury of the equipment for ventilation and haulage. Ventilating fans should be placed at one side of the mine opening, and hinged doors or light timbering should render easy the escape of the explosive force in direct line of the shaft or slope.

Proper precautions should be taken for immediately preventing the entrance

into the mine of heat and gases and for facilitating the escape of the men in case of surface or shaft fires.

(2) The surface equipment for handling the coal should be so arranged as to prevent coal dust from entering the mine shaft.

(3) In all new mines, and in all old mines as far as practicable, suitable man roads should be provided for the men separate from the main haulage roads.

(4) In connection with the system of ventilation it is recommended that in the more frequented roads connecting the intake with the return air courses, two doors be provided, these doors to be placed at such a distance apart that while one is open the other is closed.

(5) In view of the large number of accidents from falls of coal or roof, under the existing practice with single props, more attention should be given to the introduction in mines where the roof is bad of better systems of timbering, such as have been long in use with economy and safety in many well managed mines.

(6) In undercutting coal by hand, the premature fall of the coal should be prevented by sprags or other suitable supports.

(7) We believe that the difficulties and dangers encountered in the working of coal seams which are thick and steeply pitching, or of which the coal is highly inflammable in character or subject to firing from spontaneous combustion, and in mines where the subsidence of the surface must be avoided, may be successfully and economically overcome in many cases through the adoption of the flushing system of mining—that is, the filling with sand or other similar materials of the space from which the coal is removed. This system originated in the United States and is now successfully practiced in portions of Germany, Austria, Belgium and France.

I. Mine Supervision and Inspection.

(1) We cannot too strongly emphasize the fact that thorough discipline about the mine is absolutely essential to safety, and that thorough discipline can be brought about only through the hearty co-operation of the operators, the miners and the State.

(2) We are of the opinion that the responsibility for safety in the mine should primarily rest with some person, such as the manager or superintendent, clothed with full authority; and that such person can greatly facilitate the attainment of safety through the employment of a sufficient number of foremen, and also of one or more inspectors whose special duty it shall be to see that the regulations are strictly enforced.

(3) The State cannot exercise too much care concerning the experience, technical training and selection of its inspectors. Their positions should be made independent of all considerations other than that of efficiency; and their continuance in the service should be coexistent with good behavior and proper discharge of official duty.

J. Training for Mine Foremen, Inspectors, Etc.

We are of the opinion that the cause of both safety and efficiency in coal mining in the United States would be greatly aided through the establishment and maintenance in the different coal regions of special schools for the training of fire bosses, mine foremen, superintendents and inspectors. The instruction in such schools should be practical rather than theoretical.

The work of these schools would supplement most effectively that of the colleges already established in many parts of the country for the more thorough training of mining engineers.

COAL PRODUCTION

COAL TRADE FOR THE YEAR 1908.

Not in years was the depression felt in the coal trade of the state and country at large as in 1908. So accustomed had the people become to the general atmosphere of national and local prosperity, that when the true condition was realized it found many unprepared for its unwelcome, but nevertheless sure, advent.

Many causes contributed to this somewhat unnatural and heretofore inexperienced condition, especially in recent years. As already stated in the opening editorial of this report, the industrial and financial depression had its effect on the coal industry, as the general prosperity of all the trade activities must be maintained in order that a large market may be open to its product.

Weather conditions were also not conducive for the disposition of a large output, and the season was a most trying one. Prices were in a somewhat chaotic state the entire year.

The Hocking Valley district, while it experienced the effects of the business depression, possibly more than any other district in the state enjoyed a period of greater activity.

The lake trade was later in opening than for a long period of time, shipments commencing about July 1st. The domestic trade was also a disappointment to operators interested in the coal business, on account of the very low prices which prevailed, and spirited competition from other states.

Another contributory cause which had its effect upon a somewhat inactive coal production was the general suspension which occurred on April 1, 1908, on account of the wage scale agreement between the operators and the United Mine Workers of this and other states.

The interstate agreement was dissolved at a joint convention held in Indianapolis in the forepart of the year 1906. A renewal of the agreement was effected after many extended conferences, and through the efforts of those who were loath to see this splendid monument of a modern method of disposing of such momentous problems arising between capital and labor abandoned, it was again given new life by a convention which was held in Toledo, Ohio, April 14-17, 1908. The miners contended for a renewal of the wage scale on a basis of 90 cents per ton pick mining, over a one and one-quarter inch screen, for a period of one year. The outcome of this convention was a contract entered into for a period of two years. All the states formerly active in this interstate agreement took part in its renewal, with the exception of Illinois.

With such staunch supporters from the ranks of both miners and operators, with an agreement of this nature, long and disastrous strikes boding good to no one, can be entirely eliminated, and the feeling of a common cause to which each can lend their best efforts will be inaugurated and maintained. It is to be hoped that the time will never come again when there will be another disruption of this splendid manner of disposing of difficult problems connected with the production of coal.

While the loss in net tonnage for the year was large, yet we must take into consideration that the year 1907 was a phenomenal one, and that the year 1908 was one that might be designated as a more or less normal one, although once a high tonnage is attained, anything that does not reach a tonnage once produced, or that is not an increase over such a production, is usually considered one manifesting a state of general depression.

COAL TONNAGE FOR THE YEAR 1908.

The immense loss in tonnage reported for the year, viz: 6,078.149 tons, making the total production 26,287,800 tons, as compared with 32,365,949 tons for the previous year, was not surprising to those vitally interested in the coal industry, as various conditions which arose from time to time, of necessity were bound to react on it, and were foreseen and prophesied by many.

Not in years was there experienced such a depreciation in the demand for this commodity. It seemed as if all the elements of reversal had combined to make the year one of the worst in history. Ohio has for the past ten years steadily gained in the output of coal, until in 1907 the production reached a tonnage of over 32,000,000 tons.

To see this vast production depleted over six million tons in one year was indeed a disappointment to all interested in the trade. Never in the history of the state's production was there reported such an enormous loss. In the year 1895, during another time of very great depression felt all over the country, the production decreased almost three million tons.

In the great decrease during the present year, all the large coal-producing counties were affected to a greater or lesser degree.

The total pick tonnage was 4,676,869 tons, and the machine, 21,610,931 tons.

The largest tonnage was reported from Belmont County, amounting to 5,591,719 tons, a loss of 763,863 tons; Athens, 4,170,995 tons, a loss of 582,049 tons; Jefferson County, 3,565,008 tons, a loss of 1,083,255 tons; Guernsey, 2,926,448 tons, a loss of 1,082,693 tons; Perry, 2,108,050 tons, a loss of 813,704 tons. Jackson County reported a loss of over 450,000 tons, and Tuscarawas County, 445,318 tons.

The loss in pick tonnage was 1,834,904 tons, and in the machine, 4,243,245 tons. The total losses amounted to 6,267,185 tons, and the gains, 189,036 tons.

The total tonnage of the Hocking Valley District (Athens, Hocking and Perry Counties), amounted to 7,561,602 tons, a loss of a million and a half tons.

The tonnage of the No. 8 Vein (Belmont, Jefferson and Harrison Counties), was 9,604,532 tons, a loss of over one and a half millions.

We regret to say that at the close of the year 1908, the outlook for a reasonably prosperous year for the coal industry is not the most promising, and the prosperity heralded after the national election will not be fulfilled, at least in the measure anticipated and prophesied by the more optimistic. The restoration of confidence, and the investment of capital in

new ventures is usually a slow and tedious process after a year and a half of extreme business and financial depression. This has been the history of former familiar panics, and naturally will be of the one recently experienced, and business circles, as well as the laboring class, will have to patiently bide the time until we have again risen to our former enviable position which we occupy in the world of industry. -

TABLE SHOWING THE COAL PRODUCTION BY COUNTIES DURING THE YEAR 1908.

| Counties. | Tonnage for 1908. | | | | Rank in Production. |
|------------------|-------------------|-----------|-------------------|------------|------------------------|
| | Lump. | Nut. | Pea and Slack. | Total. | |
| Athens | 3,015,849 | 466,891 | 688,255 | 4,170,995 | 2 |
| Belmont | 3,633,616 | 779,380 | 1,178,723 | 5,591,719 | 1 |
| Carroll | 302,918 | 57,538 | 78,624 | 439,080 | 13 |
| Columbiana | 352,386 | 73,057 | 91,337 | 516,780 | 10 |
| Coshocton | 232,592 | 56,751 | 77,462 | 366,805 | 15 |
| Gallia | 9,551 | 1,596 | 2,545 | 13,692 | 26 |
| Guernsey | 1,985,248 | 303,586 | 637,614 | 2,926,448 | 4 |
| Harrison | 262,943 | 90,441 | 94,421 | 447,805 | 12 |
| Hocking | 905,745 | 132,577 | 244,325 | 1,282,647 | 7 |
| Holmes | 12,124 | 3,062 | 3,582 | 18,768 | 24 |
| Jackson | 590,955 | 79,045 | 166,997 | 836,997 | 8 |
| Jefferson | 2,308,587 | 468,106 | 788,315 | 3,565,008 | 3 |
| Lawrence | 130,839 | 21,215 | 28,211 | 180,265 | 19 |
| Mahoning | 58,119 | 10,132 | 18,075 | 86,326 | 23 |
| Medina | 12,786 | 1,707 | 3,610 | 18,103 | 25 |
| Meigs | 347,889 | 41,287 | 93,454 | 482,630 | 11 |
| Morgan | 159,093 | 26,141 | 31,802 | 217,036 | 16 |
| Muskingum | 288,924 | 64,531 | 83,492 | 436,947 | 14 |
| Noble | 141,113 | 25,160 | 41,919 | 208,192 | 17 |
| Perry | 1,495,859 | 225,641 | 386,550 | 2,108,050 | 5 |
| Portage | 61,229 | 12,208 | 15,106 | 88,543 | 22 |
| Scioto | 6,346 | 938 | 1,176 | 8,460 | 27 |
| Stark | 379,794 | 48,540 | 95,718 | 524,052 | 9 |
| Summit | 58,701 | 19,127 | 25,471 | 103,299 | 21 |
| Trumbull | 5,923 | 475 | 1,136 | 7,534 | 28 |
| Tuscarawas | 823,500 | 168,917 | 338,831 | 1,331,248 | 6 |
| Vinton | 135,439 | 18,434 | 29,669 | 183,542 | 18 |
| Washington | 855 | 152 | 297 | 1,304 | 29 |
| Wayne | 88,260 | 12,944 | 24,321 | 125,525 | 20 |
| Total | 17,807,183 | 3,209,579 | 5,271,038 | 26,287,800 | |

TABLE SHOWING TOTAL PRODUCTION OF PICK AND MACHINE-MINED COAL BY COUNTIES DURING THE YEAR 1908.

| Counties. | Pick Coal. | Machine Coal. | Total. |
|------------------|------------|---------------|------------|
| Athens | 186,270 | 3,984,725 | 4,170,995 |
| Belmont | 183,900 | 5,407,819 | 5,591,719 |
| Carroll | 134,014 | 305,066 | 439,080 |
| Columbiana | 236,474 | 280,306 | 516,780 |
| Coshocton | 230,236 | 136,569 | 366,805 |
| Gallia | 13,692 | ..... | 13,692 |
| Guernsey | 41,673 | 2,884,775 | 2,926,448 |
| Harrison | 41,457 | 406,348 | 447,805 |
| Hocking | 162,761 | 1,119,886 | 1,282,647 |
| Holmes | 18,768 | ..... | 18,768 |
| Jackson | 563,373 | 273,624 | 836,997 |
| Jefferson | 315,235 | 3,249,773 | 3,565,008 |
| Lawrence | 138,930 | 41,335 | 180,265 |
| Mahoning | 82,706 | 3,620 | 86,326 |
| Medina | 18,103 | ..... | 18,103 |
| Meigs | 164,154 | 318,476 | 482,630 |
| Morgan ..... | ..... | 217,036 | 217,036 |
| Muskingum | 302,205 | 134,742 | 436,947 |
| Noble | 25,106 | 183,086 | 208,192 |
| Perry | 193,300 | 1,914,750 | 2,108,050 |
| Portage | 71,358 | 17,185 | 88,543 |
| Scioto | 8,460 | ..... | 8,460 |
| Stark | 447,526 | 76,526 | 524,052 |
| Summit | 64,469 | 38,830 | 103,299 |
| Trumbull | 7,534 | ..... | 7,534 |
| Tuscarawas | 841,771 | 489,477 | 1,331,248 |
| Vinton | 58,254 | 125,288 | 183,542 |
| Washington | 1,304 | ..... | 1,304 |
| Wayne | 123,836 | 1,689 | 125,525 |
| Total | 4,676,869 | 21,610,931 | 26,287,800 |

TABLE SHOWING THE COAL TONNAGE OF THE STATE FOR 1908 AS
COMPARED WITH THE YEAR 1907.

| Counties. | 1907. | 1908. | Gain. | Loss. |
|------------------|------------|------------|---------|-----------|
| Athens | 4,753,044 | 4,170,995 | ..... | 582,049 |
| Belmont | 6,355,582 | 5,591,719 | ..... | 763,863 |
| Carroll | 371,542 | 439,080 | 67,538 | ..... |
| Columblana | 686,585 | 516,780 | ..... | 169,805 |
| Coshocton | 397,229 | 366,805 | ..... | 30,424 |
| Gallia | 36,635 | 13,692 | ..... | 22,943 |
| Guernsey | 4,009,141 | 2,926,448 | ..... | 1,082,693 |
| Harrison | 489,118 | 447,805 | ..... | 41,313 |
| Hocking | 1,392,616 | 1,282,647 | ..... | 109,969 |
| Holmes | 14,447 | 18,768 | 4,321 | ..... |
| Jackson | 1,303,529 | 836,997 | ..... | 466,532 |
| Jefferson | 4,648,263 | 3,565,008 | ..... | 1,083,255 |
| Lawrence | 246,562 | 180,265 | ..... | 66,297 |
| Mahoning | 95,280 | 86,326 | ..... | 8,954 |
| Medina | 47,181 | 18,103 | ..... | 29,078 |
| Melgs | 375,033 | 482,630 | 107,597 | ..... |
| Morgan | 290,422 | 217,036 | ..... | 73,386 |
| Muskingum | 442,278 | 436,947 | ..... | 5,331 |
| Noble | 309,349 | 208,192 | ..... | 101,157 |
| Perry | 2,921,754 | 2,108,050 | ..... | 813,704 |
| Portage | 96,463 | 88,543 | ..... | 7,920 |
| Scioto | 13,508 | 8,460 | ..... | 5,048 |
| Stark | 737,017 | 524,052 | ..... | 212,965 |
| Summit | 99,971 | 103,299 | 3,328 | ..... |
| Trumbull | 1,895 | 7,534 | 5,639 | ..... |
| Tuscarawas | 1,776,566 | 1,331,248 | ..... | 445,318 |
| Vinton | 249,475 | 183,542 | ..... | 65,933 |
| Washington | 691 | 1,304 | 613 | ..... |
| Wayne | 204,773 | 125,525 | ..... | 79,248 |
| Total | 32,365,949 | 26,287,800 | 189,036 | 6,267,185 |

Total tonnage for year 1907..... 32,365,949

Total tonnage for year 1908..... 26,287,800

Showing net loss for 1908..... 6,078,149

Total decrease 6,267,185

Total increase 189,036

Showing net loss of..... 6,078,149

PICK TONNAGE.

The pick tonnage has shown losses for several years past, with the exception of the year 1907, when the small gain of 11,510 tons was shown, and the year of 1908 was no exception, demonstrating to a marked degree the effect of the unusual conditions which prevailed, the loss amounting to 1,834,904 tons. This is also the greatest loss ever recorded in the pick tonnage of the state since the year 1894.

The total pick tonnage was 4,676,869 tons, or 17.8% of the entire tonnage of the state. In the year 1907, it was 20.1%, showing a steady decline in the production of coal by the pick method.

The tonnage of no one county reached the million ton mark mined by pick. Tuscarawas County reported 841,771 tons; Jackson, 563,373 tons; Stark, 447,526 tons; Jefferson, 315,235, and Muskingum, 302,205 tons.

The total number of pick miners engaged in the production of pick coal was 8,997, a loss of 634 as compared with the previous year. The class of persons designated as day laborers in pick mining also showed a decrease from 1,952 inside day hands in 1907 to 1,755 in 1908, and of 1,344 outside day hands in 1907 to 1,185 persons in 1908.

The average number of tons of lump coal mined by the pick miner for the year was 350 tons, and the average per day was 2.2 tons.

Gallia, Holmes, Medina, Scioto, Trumbull and Washington Counties produce pick-mined coal exclusively. However, these are very small counties as compared with the remaining counties reporting the production of coal.

As the production by pick mining decreases, that mined by the use of electricity is steadily increasing. In fact, in order to become a factor in the keen competition witnessed in this age of industrial activity, it would be useless to contemplate such an enterprise without taking into consideration the installation of the most modern types of machinery, and instead of being looked upon by the miners as an "arch enemy," its introduction and usage is now the accepted situation.

TABLE SHOWING PRODUCTION OF PICK-MINED COAL BY COUNTIES
AND PERCENTAGE OF LUMP COAL DURING THE YEAR 1908.

| Counties. | Lump. | Nut. | Pea and Slack. | Total. | Per Cent. Lump Coal. |
|------------------|-----------|---------|----------------|-----------|-------------------------|
| Athens | 129,404 | 20,966 | 35,900 | 186,270 | 69.5 |
| Belmont | 122,224 | 25,501 | 36,175 | 183,900 | 66.4 |
| Carroll | 86,367 | 22,794 | 24,853 | 134,014 | 64.4 |
| Columbiana | 169,328 | 27,693 | 39,453 | 236,474 | 71.6 |
| Coshocton | 137,327 | 39,466 | 53,443 | 230,236 | 59.6 |
| Gallia | 9,551 | 1,596 | 2,545 | 13,692 | 69.8 |
| Guernsey | 30,304 | 2,843 | 8,526 | 41,673 | 72.7 |
| Harrison | 26,852 | 6,128 | 8,477 | 41,457 | 64.8 |
| Hocking | 114,624 | 16,107 | 32,030 | 162,761 | 70.4 |
| Holmes | 12,124 | 3,062 | 3,582 | 18,768 | 64.6 |
| Jackson | 387,386 | 58,487 | 117,500 | 563,373 | 68.7 |
| Jefferson | 213,932 | 37,241 | 64,062 | 315,235 | 68.5 |
| Lawrence | 100,789 | 16,937 | 21,204 | 138,930 | 72.5 |
| Mahoning | 55,631 | 9,437 | 17,638 | 82,706 | 67.3 |
| Medina | 12,786 | 1,707 | 3,610 | 18,103 | 70.6 |
| Meigs | 112,317 | 14,722 | 37,115 | 164,154 | 68.4 |
| Morgan | | | | | |
| Muskingum | 201,846 | 42,600 | 57,759 | 302,205 | 66.8 |
| Noble | 19,638 | 1,770 | 3,698 | 25,106 | 78.2 |
| Perry | 130,882 | 22,415 | 40,003 | 193,300 | 67.7 |
| Portage | 49,629 | 9,823 | 11,906 | 71,358 | 69.5 |
| Scioto | 6,346 | 938 | 1,176 | 8,460 | 75.4 |
| Stark | 324,163 | 40,660 | 82,703 | 447,526 | 72.4 |
| Summit | 40,883 | 8,817 | 14,769 | 64,469 | 63.4 |
| Trumbull | 5,923 | 475 | 1,136 | 7,534 | 78.6 |
| Tuscarawas | 523,385 | 107,802 | 210,584 | 841,771 | 62.2 |
| Vinton | 42,398 | 5,466 | 10,390 | 58,254 | 72.8 |
| Washington | 855 | 152 | 297 | 1,304 | 65.6 |
| Wayne | 86,954 | 12,809 | 24,073 | 123,836 | 70.2 |
| Total | 3,153,848 | 558,414 | 964,607 | 4,676,869 | *67.4 |

Per cent. pick-mined coal, 17.7.

*Average per cent. of lump coal in pick mines of the state.

Average tons lump coal mined by each pick miner for year 1908, 350.

Average tons lump coal mined by each pick miner per day in 1908, 2.2.

Average tons run-of-mine coal mined by each pick miner for year 1908, 520.

Average tons run-of-mine coal mined by each pick miner per day in 1908, 3.3.

TABLE SHOWING TONS OF LUMP COAL MINED IN 1908, THE NUMBER OF PICK MINERS, AVERAGE DAYS WORKED, AND AVERAGE TONS PRODUCED BY EACH MAN PER DAY AND PER YEAR.

| Counties. | Number of Pick Miners Employed. | Average Days Pick Miners Worked. | Tons Lump Coal Pick Miners Produced. | Average Tons Mined by Each Miner for the Year 1908. | Average Tons Mined by Each Miner per Day. |
|------------------|---------------------------------|----------------------------------|--------------------------------------|---|---|
| Athens | 302 | 150 | 129,404 | 428 | 2.9 |
| Belmont | 286 | 155 | 122,224 | 427 | 2.8 |
| Carroll | 202 | 197 | 86,367 | 428 | 2.2 |
| Columblana | 504 | 175 | 169,328 | 336 | 1.9 |
| Coshocton | 317 | 194 | 137,327 | 433 | 2.2 |
| Gallia | 82 | 75 | 9,551 | 116 | 1.6 |
| Guernsey | 129 | 141 | 30,304 | 235 | 1.7 |
| Harrison | 92 | 203 | 26,852 | 292 | 1.4 |
| Hocking | 255 | 191 | 114,624 | 450 | 2.4 |
| Holmes | 50 | 173 | 12,124 | 242 | 1.4 |
| Jackson | 1,254 | 146 | 387,386 | 309 | 2.1 |
| Jefferson | 489 | 191 | 213,932 | 437 | 2.3 |
| Lawrence | 348 | 166 | 100,789 | 290 | 1.7 |
| Mahoning | 149 | 192 | 55,631 | 373 | 1.9 |
| Medina | 38 | 197 | 12,786 | 336 | 1.7 |
| Meigs | 349 | 177 | 112,317 | 322 | 1.8 |
| Morgan | | | | | |
| Muskingum | 460 | 176 | 201,846 | 439 | 2.5 |
| Noble | 71 | 177 | 19,638 | 277 | 1.6 |
| Perry | 371 | 148 | 130,882 | 353 | 2.4 |
| Portage | 156 | 169 | 49,629 | 318 | 1.9 |
| Scioto | 28 | 113 | 6,346 | 226 | 2.0 |
| Stark | 1,030 | 146 | 324,163 | 314 | 2.2 |
| Summit | 118 | 154 | 40,883 | 346 | 2.0 |
| Trumbull | 21 | 179 | 5,923 | 282 | 1.6 |
| Tuscarawas | 1,377 | 157 | 523,385 | 380 | 2.4 |
| Vinton | 173 | 120 | 42,398 | 245 | 2.0 |
| Washington | 16 | 78 | 855 | 53 | .7 |
| Wayne | 330 | 133 | 86,954 | 264 | 2.0 |
| Total | 8,997 | *160 | 3,153,848 | 350 | 2.2 |

*Note:—Average number days worked by pick miners, 160.

Average number tons lump coal mined by each man for year was 350.

Average number tons lump coal mined by each man per day, 2.2.

MACHINE-MINED COAL.

The machine coal tonnage for the year was 21,610,931 tons, or 82.2% of the entire coal tonnage of the state, of which over 14,500,000 tons was lump coal. The machine-mined coal for the year showed a depreciation in tonnage of 4,243,245 tons. The loss in the machine-mined coal was about equal to the entire tonnage reported mined by pick.

Almost the entire tonnage of Athens, Belmont, Jefferson and Guernsey Counties is mined by the use of machinery.

The largest machine tonnage was reported by Belmont County, 5,407,819 tons; Athens, 3,984,725 tons; Jefferson, 3,249,773 tons; Guernsey, 2,884,775 tons; Perry, 1,914,750 tons, and Hocking County, 1,119,886 tons.

The amount of machine-mined coal reported from all these counties shows immense losses as compared with the year 1907.

The total number of persons engaged in the production of the machine-mined coal was 38,330, a gain of over 3,000 persons.

The machine runners employed numbered 3,167; drillers, loaders and shooters, 24,882; inside day men, 6,560, and the outside day men, 3,721 men.

The average time worked in machine mines was only 159 days, which was not half time.

The total number of mining machines in use during the year was the year was 4,627, while in 1907, it was 6,056; for the day, it was 29.5 tons. The average for the year for the drillers, loaders and shooters was 589, and in 1907, 824; for the day in 1908, it was 3.8, and in 1907 it was 4.1.

The total number of mining machines in use during the year was 1,445, and the motors, 383.

By comparison, it will be seen that the net earnings of the miner for the year were far below the average.

TABLE SHOWING PRODUCTION OF MACHINE-MINED COAL BY COUNTIES, AND PERCENTAGE OF LUMP COAL DURING THE YEAR 1908.

| Counties. | Lump. | Nut. | Pea and Slack. | Total. | Per Cent. of Lump Coal. |
|------------------|------------|-----------|----------------|------------|-------------------------|
| Athens | 2,886,445 | 445,925 | 652,355 | 3,984,725 | 72.4 |
| Belmont | 3,511,392 | 753,879 | 1,142,548 | 5,407,819 | 64.9 |
| Carroll | 216,551 | 34,744 | 53,771 | 305,066 | 71.0 |
| Columbiana | 183,058 | 45,364 | 51,884 | 280,306 | 65.3 |
| Coshocton | 95,265 | 17,285 | 24,019 | 136,559 | 69.8 |
| Gallia | * | * | * | * | * |
| Guernsey | 1,954,944 | 300,743 | 629,088 | 2,884,775 | 67.8 |
| Harrison | 236,091 | 84,313 | 85,944 | 406,348 | 58.1 |
| Hocking | 791,121 | 116,470 | 212,295 | 1,119,886 | 70.6 |
| Holmes | * | * | * | * | * |
| Jackson | 203,569 | 20,558 | 49,497 | 273,624 | 74.4 |
| Jefferson | 2,094,655 | 430,865 | 724,253 | 3,249,773 | 64.5 |
| Lawrence | 30,050 | 4,278 | 7,007 | 41,335 | 72.7 |
| Mahoning | 2,488 | 695 | 437 | 3,620 | 68.7 |
| Medina | * | * | * | * | * |
| Meigs | 235,572 | 26,565 | 56,339 | 318,476 | 74.0 |
| Morgan | 159,093 | 26,141 | 31,802 | 217,036 | 73.3 |
| Muskingum | 87,078 | 21,931 | 25,733 | 134,742 | 64.6 |
| Noble | 121,475 | 23,390 | 38,221 | 183,086 | 66.3 |
| Perry | 1,364,977 | 203,226 | 346,547 | 1,914,750 | 71.3 |
| Portage | 11,600 | 2,385 | 3,200 | 17,185 | 67.5 |
| Scioto | * | * | * | * | * |
| Stark | 55,631 | 7,880 | 13,015 | 76,526 | 72.7 |
| Summit | 17,818 | 10,310 | 10,702 | 38,830 | 45.9 |
| Trumbull | * | * | * | * | * |
| Tuscarawas | 300,115 | 61,115 | 128,247 | 489,477 | 61.3 |
| Vinton | 93,041 | 12,968 | 19,279 | 125,288 | 74.3 |
| Washington | * | * | * | * | * |
| Wayne | 1,306 | 135 | 248 | 1,689 | 77.3 |
| Total | 14,653,335 | 2,651,165 | 4,306,431 | 21,610,931 | †67.8 |

*No machine coal.

Per cent. machine-mined coal, 82.2%.

†Average per cent. lump coal in machine mines of the state.

TABLE SHOWING NUMBER OF RUNNERS AND LOADERS EMPLOYED DURING 1908, AVERAGE DAYS WORKED BY EACH, TOTAL TONS LUMP COAL PRODUCED BY EACH, AND AVERAGE TONS CUT AND LOADED BY EACH FOR YEAR AND FOR EACH DAY.

| Counties. | Number Drillers, Shooters and Loaders Employed. | Number Machine Runners, Including Helpers, Employed. | Average Days Worked by Each Driller, Shooter and Loader. | Average Days Worked by Each Machine Runner. | Number Tons Lump Coal Produced in Machine Mines. | Average Tons Loaded by Each Driller, Shooter and Loader for Year. | Average Tons Loaded by Each Driller, Shooter and Loader for Each Day. | Average Tons Cut by Each Machine Runner for Year. | Average Tons Cut by Each Machine Runner per Day. |
|------------------|---|--|--|---|--|---|---|---|--|
| Athens | 5,349 | 494 | 138 | 140 | 2,886,445 | 540 | 4.0 | 5,843 | 41.7 |
| Belmont | 5,452 | 734 | 174 | 170 | 3,511,392 | 644 | 3.7 | 4,784 | 28.1 |
| Carroll | 277 | 56 | 143 | 144 | 216,551 | 782 | 5.5 | 3,867 | 26.9 |
| Columbiana | 386 | 64 | 166 | 167 | 183,058 | 474 | 2.6 | 2,860 | 16.2 |
| Coshocton | 116 | 28 | 180 | 168 | 95,265 | 821 | 4.6 | 3,402 | 20.3 |
| Galila | | | | | | | | | |
| Guernsey | 3,019 | 316 | 168 | 167 | 1,954,944 | 648 | 3.9 | 6,187 | 37.0 |
| Harrison | 375 | 52 | 186 | 186 | 236,091 | 630 | 3.4 | 4,540 | 24.4 |
| Hocking | 1,376 | 130 | 163 | 164 | 791,121 | 575 | 3.5 | 6,096 | 37.1 |
| Holmes | | | | | | | | | |
| Jackson | 386 | 66 | 149 | 146 | 203,569 | 527 | 3.5 | 3,084 | 21.1 |
| Jefferson | 3,736 | 481 | 166 | 166 | 2,094,655 | 561 | 3.4 | 4,355 | 26.1 |
| Lawrence | 72 | 12 | 186 | 175 | 30,050 | 417 | 2.2 | 2,504 | 14.3 |
| Mahoning | 11 | 2 | 111 | 111 | 2,488 | 236 | 2.0 | 1,244 | 7.3 |
| Medina | | | | | | | | | |
| Meigs | 417 | 64 | 148 | 149 | 235,572 | 565 | 3.8 | 3,681 | 24.7 |
| Morgan | 283 | 43 | 124 | 130 | 159,093 | 562 | 4.5 | 3,700 | 28.5 |
| Muskingum | 208 | 43 | 127 | 132 | 87,078 | 419 | 3.3 | 2,025 | 15.3 |
| Noble | 205 | 31 | 123 | 104 | 121,475 | 593 | 5.1 | 3,919 | 38.4 |
| Perry | 2,430 | 320 | 138 | 131 | 1,364,997 | 562 | 4.0 | 4,266 | 32.6 |
| Portage | 24 | 12 | 139 | 139 | 11,600 | 483 | 3.5 | 967 | 6.9 |
| Scioto | | | | | | | | | |
| Stark | 78 | 24 | 143 | 152 | 55,631 | 713 | 5.0 | 2,318 | 15.3 |
| Summit | 55 | 10 | 122 | 122 | 17,818 | 324 | 2.7 | 1,782 | 14.6 |
| Trumbull | | | | | | | | | |
| Tuscarawas | 437 | 133 | 187 | 187 | 300,115 | 687 | 3.7 | 2,257 | 13.0 |
| Vinton | 180 | 50 | 107 | 132 | 93,041 | 517 | 4.8 | 1,861 | 14.0 |
| Washington | | | | | | | | | |
| Wayne | 10 | 2 | 28 | 28 | 1,306 | 131 | 4.7 | 653 | 23.3 |
| Total | 24,882 | 3,167 | †157 | *157 | 14,653,335 | 589 | 3.8 | 4,627 | 29.5 |

Note:—Average tons lump coal cut by each machine runner for year..... 4,627

Average tons lump coal cut by each machine runner for each day..... 29.5

Average tons lump coal loaded by each loader for year..... 589

Average tons lump coal loaded by each loader per day..... 3.8

*Average days worked by machine runners.

†Average days worked by drillers, loaders and shooters.

TABLE SHOWING THE COAL OUTPUT SINCE 1872 IN PICK AND MACHINE MINES, AND THE TOTAL TONNAGE FOR EACH YEAR.

| Year. | Total Tonnage Pick Coal Produced Each Year Since 1872. | Total Tonnage Machine Coal Produced Since 1889 when Machinery was Used to Undercut Coal. | Total Number Tons Produced for Each Year Since 1872. | Gain. | Loss. |
|-------|--|--|--|-----------|-----------|
| 1872 | 5,315,294 | | 5,315,294 | | |
| 1873 | 4,550,028 | | 4,550,028 | | 765,266 |
| 1874 | 3,267,585 | | 3,267,585 | | 1,282,443 |
| 1875 | 4,864,259 | | 4,864,259 | 1,596,674 | |
| 1876 | 3,500,000 | | 3,500,000 | | 1,364,259 |
| 1877 | 5,250,000 | | 5,250,000 | 1,750,000 | |
| 1878 | 5,500,000 | | 5,500,000 | 250,000 | |
| 1879 | 6,000,000 | | 6,000,000 | 500,000 | |
| 1880 | 7,000,000 | | 7,000,000 | 1,000,000 | |
| 1881 | 8,225,000 | | 8,225,000 | 1,225,000 | |
| 1882 | 9,450,000 | | 9,450,000 | 1,225,000 | |
| 1883 | 8,229,429 | | 8,229,429 | | 1,220,571 |
| 1884 | 7,650,062 | | 7,650,062 | | 579,367 |
| 1885 | 7,816,179 | | 7,816,179 | 166,117 | |
| 1886 | 8,435,211 | | 8,435,211 | 619,032 | |
| 1887 | 10,301,708 | | 10,301,708 | 1,866,479 | |
| 1888 | 10,910,946 | | 10,910,946 | 613,338 | |
| 1889 | 10,007,385 | 900,000 | 10,907,385 | | 3,561 |
| 1890 | 10,640,360 | 1,148,499 | 11,788,859 | 881,474 | |
| 1891 | 11,396,106 | 1,654,081 | 13,050,187 | 1,261,328 | |
| 1892 | 12,360,828 | 2,239,080 | 14,599,908 | 1,549,721 | |
| 1893 | 12,275,023 | 2,553,074 | 14,828,097 | 228,189 | |
| 1894 | 9,354,753 | 2,555,466 | 11,910,219 | | 2,917,878 |
| 1895 | 10,563,423 | 3,120,456 | 13,683,879 | 1,773,660 | |
| 1896 | 9,544,259 | 3,368,349 | 12,912,608 | | 771,271 |
| 1897 | 8,342,698 | 4,106,124 | 12,448,822 | | 463,786 |
| 1898 | 8,805,557 | 5,252,598 | 14,058,155 | 1,609,333 | |
| 1899 | 9,167,874 | 6,741,060 | 15,908,934 | 1,850,799 | |
| 1900 | 9,966,872 | 9,457,777 | 19,426,649 | 3,517,715 | |
| 1901 | 9,831,476 | 10,489,814 | 20,321,290 | 894,641 | |
| 1902 | 10,489,619 | 13,439,648 | 23,929,267 | 3,607,977 | |
| 1903 | 10,012,335 | 14,560,931 | 24,573,266 | 643,979 | |
| 1904 | 8,037,360 | 16,546,455 | 24,583,815 | 10,549 | |
| 1905 | 6,825,125 | 19,009,532 | 25,834,657 | 1,250,842 | |
| 1906 | 6,500,263 | 20,713,232 | 27,213,495 | 1,378,838 | |
| 1907 | 6,511,773 | 25,854,176 | 32,365,949 | 5,152,454 | |
| 1908 | 4,676,869 | 21,610,931 | 26,287,800 | | 6,078,149 |

TABLE SHOWING ANNUAL PRODUCTION OF PICK AND MACHINE-MINED COAL, AND THE GAIN AND LOSS SINCE THE YEAR 1889 OR THE INTRODUCTION OF MINING MACHINERY.

| Year. | Total Tons Pick Coal Produced Since 1889. | Gain. | Loss. | Total Tons Machine Coal Produced Since 1889. | Gain. | Loss. |
|------------|---|-----------|-----------|--|-----------|-----------|
| 1889 | 10,007,385 | ..... | ..... | 900,000 | ..... | ..... |
| 1890 | 10,640,360 | 632,975 | ..... | 1,148,499 | 248,499 | ..... |
| 1891 | 11,396,106 | 755,746 | ..... | 1,654,081 | 505,632 | ..... |
| 1892 | 12,360,828 | 964,722 | ..... | 2,239,080 | 584,999 | ..... |
| 1893 | 12,275,023 | ..... | 85,805 | 2,553,074 | 313,994 | ..... |
| 1894 | 9,354,753 | ..... | 2,920,270 | 2,555,466 | 2,392 | ..... |
| 1895 | 10,563,423 | 1,208,670 | ..... | 3,120,456 | 564,990 | ..... |
| 1896 | 9,544,259 | ..... | 1,019,164 | 3,368,349 | 247,893 | ..... |
| 1897 | 8,342,698 | ..... | 1,201,561 | 4,106,124 | 737,775 | ..... |
| 1898 | 8,805,557 | 462,859 | ..... | 5,252,598 | 1,146,474 | ..... |
| 1899 | 9,167,874 | 362,317 | ..... | 6,741,060 | 1,488,462 | ..... |
| 1900 | 9,966,872 | 798,998 | ..... | 9,457,777 | 2,716,717 | ..... |
| 1901 | 9,831,476 | ..... | 135,396 | 10,489,814 | 1,032,037 | ..... |
| 1902 | 10,489,619 | 658,143 | ..... | 13,439,648 | 2,949,834 | ..... |
| 1903 | 10,012,335 | ..... | 477,284 | 14,560,931 | 1,121,283 | ..... |
| 1904 | 8,037,360 | ..... | 1,974,975 | 16,546,455 | 1,985,524 | ..... |
| 1905 | 6,825,125 | ..... | 1,212,235 | 19,009,532 | 2,463,077 | ..... |
| 1906 | 6,500,263 | ..... | 324,862 | 20,713,232 | 1,703,700 | ..... |
| 1907 | 6,511,773 | 11,510 | ..... | 25,854,176 | 5,140,944 | ..... |
| 1908 | 4,676,869 | ..... | 1,834,904 | 21,610,931 | ..... | 4,243,245 |

TABLE SHOWING THE COMPANIES WHO REPORTED AS HANDLING POWDER, AND THE NUMBER NOT REPORTING, IN THE PICK AND MACHINE MINES IN THE COUNTIES OF THE STATE FOR THE YEAR 1908.

| Counties. | Companies Who Reported Powder. | Companies Failing to Report Powder. | Number of Kegs Reported by Pick Mines. | Number of Kegs Reported by Machine Mines. | Total Number Kegs of Powder Reported. |
|------------------|--------------------------------|-------------------------------------|--|---|---------------------------------------|
| Athens | 47 | 4 | 2,586 | 21,630 | 24,216 |
| Belmont | 50 | 22 | 1,024 | 23,862 | 24,886 |
| Carroll | 24 | 8 | 4,186 | 1,655 | 5,841 |
| Columblana | 30 | 13 | 5,808 | 1,552 | 7,360 |
| Coshocton | 16 | 17 | 4,276 | 1,286 | 5,562 |
| Gallia | 8 | 4 | 288 | ..... | 288 |
| Guernsey | 25 | 14 | 534 | 18,370 | 18,904 |
| Harrison | 7 | 28 | 145 | 2,436 | 2,581 |
| Hocking | 16 | 1 | 1,596 | 6,008 | 7,604 |
| Holmes | 8 | 10 | 60 | ..... | 60 |
| Jackson | 59 | 8 | 26,984 | 2,536 | 29,520 |
| Jefferson | 31 | 22 | 586 | 7,361 | 7,947 |
| Lawrence | 29 | 13 | 3,198 | 1,200 | 4,398 |
| Mahoning | 9 | 16 | 1,379 | 38 | 1,417 |
| Medina | 2 | ..... | 671 | ..... | 671 |
| Meigs | 7 | 1 | 798 | 1,131 | 1,929 |
| Morgan | 29 | 18 | ..... | 867 | 867 |
| Muskingum | 35 | 37 | 12,191 | 666 | 12,857 |
| Noble | 27 | 11 | 327 | 1,433 | 1,760 |
| Perry | 48 | 12 | 4,057 | 18,894 | 22,951 |
| Portage | 3 | 2 | 5,105 | 530 | 5,635 |
| Scioto | 2 | 1 | 423 | ..... | 423 |
| Stark | 35 | 27 | 9,460 | 577 | 10,037 |
| Summit | 9 | 1 | 2,410 | 571 | 2,981 |
| Trumbull | 6 | 5 | 164 | ..... | 164 |
| Tuscarawas | 57 | 26 | 16,622 | 4,612 | 21,234 |
| Vinton | 18 | 2 | 3,032 | 909 | 3,941 |
| Washington | 2 | ..... | 65 | ..... | 65 |
| Wayne | 7 | 2 | 4,840 | 44 | 4,884 |
| Total | 646 | 325 | 112,815 | 118,168 | 230,983 |

N. B.—This table does not show all the powder used in the production of coal; many miners buy powder independent of the companies, and it is not reported.

TABLE SHOWING THE NUMBER OF MACHINE RUNNERS, DRILLERS, SHOOTERS AND LOADERS, INSIDE AND OUTSIDE HANDS, NUMBER OF KEGS OF POWDER USED, AND TOTAL TONNAGE OF MACHINE MINES FOR THE YEAR 1908.

| Counties. | Number of Runners. | Number of Loaders. | Number of Inside Day Hands. | Number of Outside Day Hands. | Total Number Men Employed. | Kegs of Powder Used in Machine Mines. | Total Number Tons Machine-Mined Coal. | Per Cent. Machine-Mined Coal as Compared with Total Output in County. | Average Number Days Worked by Runners. | Average Number Days Worked by Drillers, Shooters and Loaders. |
|------------------|--------------------|--------------------|-----------------------------|------------------------------|----------------------------|---------------------------------------|---------------------------------------|---|--|---|
| Athens | 494 | 5,349 | 1,346 | 833 | 8,022 | 21,630 | 3,984,725 | 96.5 | 140 | 138 |
| Belmont | 734 | 5,452 | 1,298 | 625 | 8,109 | 23,962 | 5,407,819 | 96.7 | 170 | 174 |
| Carroll | 56 | 277 | 58 | 38 | 429 | 1,655 | 305,066 | 69.5 | 144 | 143 |
| Columbiana | 64 | 286 | 116 | 64 | 630 | 1,552 | 290,306 | 54.2 | 167 | 166 |
| Coshocton | 28 | 116 | 42 | 29 | 215 | 1,286 | 136,569 | 37.2 | 168 | 180 |
| Gallia | | | | | | | | | | |
| Guernsey | 316 | 3,019 | 1,084 | 344 | 4,763 | 18,370 | 2,884,775 | 98.6 | 167 | 168 |
| Harrison | 52 | 375 | 81 | 45 | 553 | 2,436 | 406,348 | 90.7 | 186 | 186 |
| Hocking | 130 | 1,376 | 298 | 240 | 2,044 | 6,008 | 1,119,886 | 87.3 | 164 | 163 |
| Holmes | | | | | | | | | | |
| Jackson | 66 | 386 | 191 | 91 | 734 | 2,536 | 273,624 | 32.7 | 146 | 149 |
| Jefferson | 481 | 3,736 | 870 | 629 | 5,716 | 7,361 | 3,249,773 | 91.2 | 166 | 166 |
| Lawrence | 12 | 72 | 15 | 16 | 115 | 1,200 | 41,335 | 22.9 | 175 | 186 |
| Mahoning | 2 | 11 | 4 | 2 | 19 | 38 | 3,630 | 4.2 | 111 | 111 |
| Medina | | | | | | | | | | |
| Meigs | 64 | 417 | 119 | 81 | 681 | 1,131 | 318,476 | 66.0 | 149 | 148 |
| Morgan | 43 | 283 | 65 | 42 | 433 | 867 | 217,036 | 100.0 | 130 | 124 |
| Muskingum | 43 | 208 | 40 | 37 | 328 | 666 | 134,742 | 30.8 | 132 | 127 |
| Noble | 31 | 205 | 103 | 23 | 362 | 1,433 | 183,086 | 87.9 | 104 | 123 |
| Perry | 320 | 2,430 | 591 | 420 | 3,761 | 18,894 | 1,914,760 | 90.8 | 131 | 138 |
| Portage | 12 | 24 | 9 | 6 | 51 | 530 | 17,185 | 19.4 | 139 | 139 |
| Scioto | | | | | | | | | | |
| Stark | 24 | 78 | 42 | 22 | 166 | 577 | 76,526 | 14.6 | 152 | 143 |
| Summit | 10 | 55 | 10 | 20 | 96 | 571 | 38,830 | 37.6 | 122 | 122 |
| Trumbull | | | | | | | | | | |
| Tuscarawas | 133 | 437 | 121 | 74 | 765 | 4,612 | 489,477 | 36.8 | 187 | 187 |
| Vinton | 50 | 180 | 56 | 39 | 325 | 909 | 125,288 | 68.3 | 132 | 107 |
| Washington | | | | | | | | | | |
| Wayne | 2 | 10 | 1 | 1 | 14 | 44 | 1,689 | 1.3 | 28 | 28 |
| Total | 3,167 | 24,882 | 6,560 | 3,721 | 38,330 | 118,168 | 21,610,931 | 182.2 | 157 | *157 |

*Average days worked for the year.

Note.—Per cent. of machine-mined coal for the state.

TABLE SHOWING COMPARISON FOR YEARS 1907 AND 1908 PERTAINING TO THE NUMBER OF MINING MACHINES IN OPERATION, AVERAGE NUMBER TONS OF RUN-OF-MINE CUT BY EACH RUNNER FOR THE YEAR AND FOR EACH DAY; ALSO NUMBER OF TONS CUT BY EACH MACHINE FOR THE YEAR AND FOR EACH DAY.

| Counties. | Number Mining Machines in Use in 1907. | Number Mining Machines in Use in 1908. | Gain. | Loss. | Average Tons Run-of-Mine Cut by Each Runner in 1907. | Average Tons Run-of-Mine Cut by Each Runner in 1908. | Average Tons Run-of-Mine Cut by Each Runner per Day in 1907. | Average Tons Run-of-Mine Cut by Each Runner per Day in 1908. | Average Tons Cut by Each Machine in 1907. | Average Tons Cut by Each Machine per day in 1907. | Average Tons Cut by Each Machine in 1908. | Average Tons Cut by Each Machine per day in 1908. |
|------------|--|--|-------|-------|--|--|--|--|---|---|---|---|
| Athens | 178 | 195 | 17 | | 10,104 | 8,066 | 57.1 | 57.6 | 35,713 | 145.2 | 20,434 | 116.0 |
| Belmont | 240 | 280 | 30 | | 10,129 | 7,208 | 43.6 | 43.3 | 29,500 | 101.3 | 19,511 | 113.4 |
| Carroll | 29 | 29 | | | 5,568 | 5,448 | 39.5 | 39.2 | 11,135 | 58.9 | 10,520 | 73.0 |
| Columbiana | 30 | 38 | 8 | | 4,825 | 4,380 | 21.1 | 22.4 | 8,524 | 31.4 | 7,336 | 41.2 |
| Coshocton | 14 | 15 | 1 | | 3,791 | 4,877 | 18.4 | 19.0 | 7,351 | 33.5 | 9,105 | 54.1 |
| Gallia | | | | | | | | | | | | |
| Guernsey | 122 | 114 | | 6 | 12,460 | 9,129 | 61.9 | 51.7 | 32,598 | 166.7 | 21,882 | 148.9 |
| Harrison | 24 | 21 | | 3 | 7,886 | 7,514 | 38.5 | 42.0 | 15,561 | 75.6 | 13,350 | 104.0 |
| Hocking | 45 | 60 | 15 | | 9,284 | 5,615 | 51.0 | 52.5 | 12,157 | 151.0 | 22,398 | 136.6 |
| Holmes | | | | | | | | | | | | |
| Jackson | 78 | 73 | | 5 | 4,519 | 1,146 | 23.1 | 28.4 | 7,174 | 36.4 | 3,748 | 25.7 |
| Jefferson | 221 | 238 | 17 | | 9,408 | 6,756 | 41.6 | 40.7 | 18,348 | 81.2 | 13,655 | 82.3 |
| Lawrence | 6 | 2 | | 4 | 4,061 | 3,445 | 16.6 | 19.7 | 6,763 | 27.7 | 20,668 | 118.1 |
| Mahoning | | 1 | 1 | | | 1,810 | | 47.6 | | | 3,620 | 32.6 |
| Medina | | | | | | | | | | | | |
| Meigs | 32 | 35 | 3 | | 1,371 | 4,976 | 21.3 | 33.4 | 7,107 | 39.5 | 9,000 | 61.1 |
| Morgan | 14 | 14 | | | 6,314 | 5,947 | 29.2 | 38.8 | 20,734 | 96.6 | 15,503 | 119.3 |
| Muskingum | 19 | 24 | 5 | | 4,326 | 3,134 | 20.9 | 27.7 | 8,423 | 40.7 | 5,614 | 42.5 |
| Noble | 10 | 11 | 1 | | 10,829 | 5,996 | 41.3 | 56.8 | 29,237 | 111.6 | 16,644 | 160.0 |
| Perry | 180 | 153 | | 27 | 7,534 | 5,984 | 41.4 | 45.7 | 14,872 | 81.3 | 12,515 | 95.5 |
| Portage | 10 | 8 | | 2 | 2,139 | 1,432 | 10.9 | 10.3 | 4,278 | 21.8 | 2,148 | 15.5 |
| Scioto | | | | | | | | | | | | |
| Stark | 30 | 29 | | 1 | 4,153 | 3,189 | 20.0 | 21.0 | 4,430 | 21.3 | 2,639 | 17.4 |
| Summit | 7 | 3 | | 4 | 3,323 | 3,883 | 17.5 | 31.8 | 4,747 | 25.0 | 12,943 | 106.1 |
| Trumbull | | | | | | | | | | | | |
| Tuscarawas | 70 | 85 | 15 | | 3,635 | 3,680 | 18.3 | 19.7 | 6,903 | 34.2 | 5,758 | 30.8 |
| Vinton | 22 | 23 | 1 | | 4,102 | 2,506 | 23.4 | 19.0 | 8,950 | 51.1 | 5,635 | 43.1 |
| Washington | | | | | | | | | | | | |
| Wayne | | 3 | 3 | | | 845 | | 30.1 | | | 503 | 20.1 |
| Total | 1,396 | 1,445 | 106 | 57 | 8,725 | 6,823 | 42.4 | 43.5 | 18,520 | 89.9 | 14,966 | 95.3 |

Note:—

| | |
|---|--------|
| Number mining machines in operation in 1908..... | 1,445 |
| Number mining machines in operation in 1907..... | 1,396 |
| Increase for 1908, as compared with 1907..... | 49 |
| Average number of tons "Run of Mine" cut by each runner for the year..... | 6,823 |
| Average number tons "Run of Mine" cut by each runner for the year 1907..... | 8,725 |
| Decrease, as compared with the year 1907..... | 1,902 |
| Average number tons "Run of Mine" cut by each runner per day for the year 1908..... | 43.5 |
| Average number tons "Run of Mine" cut by each runner per day for the year 1907..... | 42.4 |
| Increase, as compared with the year 1907..... | 1.1 |
| Average number tons "Run of Mine" cut by each machine for the year 1908..... | 14,966 |
| Average number tons "Run of Mine" cut by each machine for the year 1907..... | 18,520 |
| Decrease, as compared with the year 1907..... | 3,554 |
| Average number tons "Run of Mine" cut by each machine per day in 1908..... | 95.3 |
| Average number tons "Run of Mine" cut by each machine per day in 1907..... | 89.9 |
| Increase, as compared with the year 1907..... | 5.4 |

TABLE SHOWING NUMBER OF DAYS WORKED, DRILLERS, SHOOTERS AND LOADERS, AND TONS LUMP COAL PRODUCED BY EACH PER YEAR AND PER DAY IN 1908, AS COMPARED WITH THE YEAR 1907.

| Counties. | Number Days Pick Miners Worked in 1907. | Number Days Pick Miners Worked in 1908. | Number Days Drillers, Shooters and Loaders Worked in 1907. | Number Days Drillers, Shooters and Loaders Worked in 1908. | Number Days Machine Runners Worked in 1907. | Number Days Machine Runners Worked in 1908. | Average No. Tons Lump Coal Produced by Each Pick Miner in 1907. | Average No. Tons Lump Coal Produced by Each Pick Miner in 1908. | Average No. Tons Lump Coal Loaded by Drillers, Shooters and Loaders for 1907. | Average Number Tons Lump Coal Loaded by Drillers, Shooters and Loaders for 1908. | Average No. Tons Lump Coal Loaded by Drillers, Shooters and Loaders per Day in 1907. | Average No. Tons Lump Coal Loaded by Drillers, Shooters and Loaders per Day in 1908. |
|------------------|---|---|--|--|---|---|---|---|---|--|--|--|
| Athens | 192 | 150 | 167 | 138 | 177 | 140 | 2.7 | 2.9 | 714 | 540 | 4.3 | 4.0 |
| Belmont | 205 | 155 | 227 | 174 | 232 | 170 | 2.2 | 2.8 | 876 | 644 | 3.9 | 3.7 |
| Carroll | 175 | 197 | 199 | 143 | 189 | 144 | 1.5 | 2.2 | 711 | 782 | 3.6 | 5.5 |
| Columbiana | 259 | 175 | 213 | 166 | 228 | 167 | 1.8 | 1.9 | 581 | 474 | 2.7 | 2.6 |
| Coshocton | 222 | 194 | 208 | 180 | 206 | 168 | 2.2 | 2.2 | 882 | 821 | 4.2 | 4.6 |
| Gallia | 181 | 75 | ..... | ..... | ..... | ..... | 2.0 | 1.6 | ..... | ..... | ..... | ..... |
| Guernsey | 154 | 141 | 221 | 168 | 222 | 167 | 1.8 | 1.7 | 1,009 | 648 | 4.6 | 3.9 |
| Harrison | 212 | 203 | 204 | 186 | 205 | 186 | 1.4 | 1.4 | 1,003 | 630 | 4.9 | 3.4 |
| Hocking | 148 | 191 | 160 | 163 | 164 | 164 | 3.6 | 2.4 | 703 | 575 | 4.4 | 3.5 |
| Holmes | 186 | 173 | ..... | ..... | ..... | ..... | 1.0 | 1.4 | ..... | ..... | ..... | ..... |
| Jackson | 167 | 146 | 205 | 149 | 197 | 146 | 2.4 | 2.1 | 791 | 527 | 3.9 | 3.5 |
| Jefferson | 216 | 191 | 226 | 166 | 226 | 166 | 2.5 | 2.3 | 892 | 561 | 3.9 | 3.4 |
| Lawrence | 191 | 166 | 244 | 186 | 244 | 175 | 1.8 | 1.7 | 533 | 417 | 2.2 | 2.2 |
| Mahoning | 206 | 192 | ..... | 111 | ..... | 171 | 1.5 | 1.9 | ..... | 226 | ..... | 2.0 |
| Medina | 192 | 197 | ..... | ..... | ..... | ..... | 2.0 | 1.7 | ..... | ..... | ..... | ..... |
| Melges | 145 | 177 | 167 | 148 | 180 | 149 | 2.3 | 1.8 | 590 | 565 | 3.5 | 3.8 |
| Morgan ..... | ..... | ..... | 216 | 124 | 217 | 130 | ..... | ..... | 665 | 562 | 3.1 | 4.5 |
| Muskingum | 203 | 176 | 192 | 127 | 207 | 132 | 2.2 | 2.5 | 831 | 419 | 4.3 | 3.3 |

| | | | | | | | | | | | | | | |
|------------------|-----|-----|-------|-------|-------|-------|-----|-----|-----|-----|-------|-------|-------|-------|
| Noble | 147 | 177 | 260 | 123 | 262 | 104 | 229 | 277 | 1.6 | 1.6 | 1,132 | 593 | 4.4 | 5.1 |
| Perry | 169 | 148 | 183 | 138 | 183 | 131 | 368 | 353 | 2.3 | 2.4 | 723 | 562 | 4.5 | 4.0 |
| Portage | 171 | 169 | 195 | 139 | 196 | 139 | 443 | 318 | 2.6 | 1.9 | 790 | 483 | 4.1 | 3.5 |
| Scioto | 130 | 113 | ..... | ..... | ..... | ..... | 302 | 226 | 2.3 | 2.0 | ..... | ..... | ..... | ..... |
| Stark | 172 | 146 | 194 | 143 | 208 | 152 | 422 | 314 | 2.5 | 2.2 | 836 | 713 | 4.3 | 5.0 |
| Summit | 118 | 154 | 190 | 122 | 190 | 122 | 173 | 346 | 1.5 | 2.0 | 548 | 324 | 2.9 | 2.7 |
| Trumbull | 176 | 179 | ..... | ..... | ..... | ..... | 195 | 282 | 1.1 | 1.6 | ..... | ..... | ..... | ..... |
| Tuscarawas | 214 | 157 | 183 | 187 | 199 | 187 | 615 | 380 | 2.9 | 2.4 | 731 | 687 | 4.0 | 3.7 |
| Vinton | 166 | 120 | 177 | 107 | 175 | 132 | 281 | 245 | 1.7 | 2. | 553 | 517 | 3.1 | 4.8 |
| Washington | 140 | 78 | ..... | ..... | ..... | ..... | 238 | 53 | 1.7 | .7 | ..... | ..... | ..... | ..... |
| Wayne | 224 | 133 | ..... | 28 | ..... | 28 | 468 | 264 | 2.1 | 2.0 | ..... | 131 | ..... | 4.7 |

| | |
|---|-------|
| Average number days worked by Pick Miners in 1907..... | 191 |
| Average number days worked by Pick Miners in 1908..... | 180 |
| Average number days worked by Drillers, Shooters and Loaders in 1907..... | 201 |
| Average number days worked by Drillers, Shooters and Loaders in 1908..... | 187 |
| Average number days worked by Machine Runners in 1907..... | 206 |
| Average number days worked by Machine Runners in 1908..... | 157 |
| Average number tons lump coal mined by Each Pick Miner for year 1907..... | 445 |
| Average number tons lump coal mined by Each Pick Miner for year 1908..... | 350 |
| Average number tons lump coal mined by Each Pick Miner per day in 1907..... | 2.3 |
| Average number tons lump coal mined by Each Pick Miner per day in 1908..... | 2.2 |
| Average number tons lump coal loaded by each Driller, Shooter and Loader for 1907..... | 824 |
| Average number tons lump coal loaded by each Driller, Shooter and Loader for 1908..... | 589 |
| Average number tons lump coal loaded by each Driller, Shooter and Loader per day in 1907..... | 4.1 |
| Average number tons lump coal loaded by each Driller, Shooter and Loader per day in 1908..... | 3.8 |
| Average number tons lump coal cut by each Machine Runner for year 1907..... | 6,056 |
| Average number tons lump coal cut by each Machine Runner for year 1908..... | 4,627 |
| Average number tons lump coal cut by each Machine Runner per day in 1907..... | 29.4 |
| Average number tons lump coal cut by each Machine Runner per day in 1908..... | 29.5 |

TABLE SHOWING TOTAL TONS RUN-OF MINE COAL PRODUCED, AVERAGE TONS PRODUCED IN BOTH PICK AND MACHINE MINES FOR EACH MINER, RUNNER AND LOADER FOR THE YEAR AND FOR EACH DAY.

| Counties. | No. Tons Mined With Pick. | No. Tons Mined With Machine. | Average No. Tons Run-of-Mine Mined by Each Pick Miner per Year in Pick Mines. | Average No. Tons Run-of-Mine Mined by Each Pick Miner per Day in Pick Mines. | Average No. Tons Run-of-Mine Cut by Each Runner per Year in Machine Mines. | Average No. Tons Run-of-Mine Cut by Each Runner per Day in Machine Mines. | Average No. Tons Run-of-Mine Loaded by Each Loader per Year in Machine Mines. | Average No. Tons Run-of-Mine Loaded by Each Loader per Day in Machine Mines. |
|-----------------|---------------------------|------------------------------|---|--|--|---|---|--|
| Athens | 186,270 | 3,984,725 | 617 | 4.1 | 8,066 | 57.6 | 748 | 5.4 |
| Belmont | 182,900 | 5,407,819 | 643 | 4.2 | 7,368 | 43.3 | 992 | 5.7 |
| Carroll | 134,014 | 305,066 | 663 | 3.4 | 5,448 | 37.8 | 1,101 | 7.7 |
| Columbiana .. | 236,474 | 280,306 | 469 | 2.7 | 4,380 | 26.2 | 726 | 4.4 |
| Coshocton | 230,236 | 136,669 | 726 | 3.7 | 4,877 | 29.0 | 1,177 | 6.5 |
| Gallia | 13,692 | ..... | 167 | 2.2 | ..... | ..... | ..... | ..... |
| Guernsey | 41,673 | 2,884,775 | 323 | 2.3 | 9,129 | 54.7 | 956 | 5.7 |
| Harrison | 41,457 | 406,348 | 451 | 2.2 | 7,814 | 42.0 | 1,084 | 5.8 |
| Hocking | 162,761 | 1,119,886 | 638 | 3.3 | 8,615 | 52.5 | 814 | 5.0 |
| Holmes | 18,768 | ..... | 375 | 2.2 | ..... | ..... | ..... | ..... |
| Jackson | 563,373 | 273,624 | 450 | 3.1 | 4,146 | 28.4 | 709 | 4.8 |
| Jefferson | 315,235 | 3,249,773 | 645 | 3.4 | 6,756 | 40.7 | 870 | 5.2 |
| Lawrence | 138,930 | 41,335 | 399 | 2.4 | 3,445 | 19.7 | 574 | 3.1 |
| Mahoning | 82,706 | 3,620 | 549 | 2.9 | 1,810 | 47.6 | 329 | 3.0 |
| Medina | 18,103 | ..... | 476 | 2.4 | ..... | ..... | ..... | ..... |
| Meigs | 164,154 | 318,476 | 449 | 2.5 | 4,976 | 33.4 | 764 | 5.2 |
| Morgan ..... | ..... | 217,036 | ..... | ..... | 5,047 | 38.8 | 767 | 6.2 |
| Muskingum ... | 302,205 | 134,742 | 658 | 3.7 | 3,134 | 23.7 | 648 | 5.1 |
| Noble | 25,106 | 183,086 | 354 | 2.0 | 5,906 | 56.8 | 893 | 7.3 |
| Perry | 193,300 | 1,914,750 | 521 | 3.5 | 5,984 | 45.7 | 788 | 5.7 |
| Portage | 71,358 | 17,185 | 457 | 2.7 | 1,432 | 10.3 | 716 | 5.2 |
| Scioto | 8,460 | ..... | 303 | 2.6 | ..... | ..... | ..... | ..... |
| Stark | 447,526 | 76,526 | 434 | 3.0 | 3,189 | 21.0 | 981 | 3.9 |
| Summit | 64,469 | 38,830 | 546 | 3.5 | 3,883 | 31.8 | 706 | 5.8 |
| Trumbull | 7,534 | ..... | 359 | 2.0 | ..... | ..... | ..... | ..... |
| Tuscarawas ... | 841,771 | 489,477 | 611 | 3.9 | 3,680 | 19.7 | 1,120 | 6.0 |
| Vinton | 58,254 | 125,288 | 319 | 2.7 | 2,506 | 19.0 | 696 | 6.5 |
| Washington .. | 1,304 | ..... | 82 | 1.1 | ..... | ..... | ..... | ..... |
| Wayne | 123,836 | 1,689 | 375 | 2.8 | 845 | 30.1 | 169 | 6.0 |
| Total | 4,676,869 | 21,610,931 | *518 | *3.2 | *6,823 | *43.5 | *869 | *5.5 |

Note.—*Average for State.

TABLE SHOWING THE NUMBER OF TONS OF PICK AND MACHINE COAL, ALSO TOTAL TONS PRODUCED, THE PER CENT. OF MACHINE COAL AS COMPARED WITH THE TOTAL TONNAGE, THE NUMBER OF PICK MINERS, MACHINE RUNNERS AND DRILLERS, SHOOTERS AND LOADERS, THE AVERAGE NUMBER TONS LUMP COAL PRODUCED BY EACH PICK MINER, LOADER AND RUNNER FOR THE YEAR 1908, THE NUMBER OF DAY HANDS EMPLOYED, AND THE AVERAGE NUMBER OF TONS OF RUN-OF-MINE PRODUCED BY EACH.

| Counties. | Total Tons Pick & Coal Mined in 1908 | Total Tons Machine Coal Mined in 1908 | Total Tons Coal Mined in 1908 | Per Cent. of Machine-Mined Coal in 1908 | Total Number Pick Miners | Total Number Machine Runners | Total Number Drillers, Shooters and Loaders | Average No. Days Worked in Pick Mines in 1908 | Average No. Days Worked in Machine Mines in 1908 | Average No. Tons Lump Coal Mined for each Pick Miner for 1908 | Average No. Tons Lump Coal Loaded by Each Driller, Shooter and Loader for 1908 | Average No. Tons Lump Coal Cut by Each Runner in 1908 | Total No. Day Hands, Inside and Outside, in both Pick and Machine Mines. | Average No. Tons Run-of-Mine Produced for Each Day Hand in Both Pick and Machine Mines for Year. |
|-----------------|--------------------------------------|---------------------------------------|-------------------------------|---|--------------------------|------------------------------|---|---|--|---|--|---|--|--|
| Athens..... | 186,270 | 3,984,725 | 4,170,995 | 65.5 | 302 | 491 | 5,349 | 150 | 138 | 428 | 540 | 5,843 | 2,244 | 1,569 |
| Belmont..... | 183,900 | 5,407,819 | 5,591,719 | 96.7 | 280 | 734 | 5,452 | 155 | 174 | 427 | 644 | 4,784 | 2,030 | 2,765 |
| Carroll..... | 134,014 | 3,055,066 | 3,189,080 | 69.5 | 202 | 56 | 2,777 | 197 | 143 | 428 | 782 | 3,887 | 1,555 | 2,833 |
| Columbiana..... | 236,474 | 280,306 | 516,780 | 54.2 | 504 | 64 | 356 | 175 | 166 | 336 | 474 | 2,860 | 357 | 1,448 |
| Coshocton..... | 230,236 | 136,569 | 366,805 | 37.2 | 217 | 28 | 116 | 194 | 180 | 438 | 821 | 3,402 | 172 | 2,133 |
| Gallia..... | 13,692 | | 13,692 | | 82 | | | 75 | | 116 | | | 22 | 622 |
| Guernsey..... | 41,673 | 2,884,775 | 2,926,448 | 98.6 | 129 | 316 | 3,019 | 141 | 168 | 235 | 648 | 6,187 | 1,459 | 2,006 |
| Harrison..... | 41,457 | 406,348 | 447,805 | 90.7 | 92 | 52 | 375 | 203 | 186 | 292 | 630 | 4,540 | 148 | 3,026 |
| Hocking..... | 162,761 | 1,119,886 | 1,282,647 | 87.3 | 255 | 130 | 1,376 | 191 | 163 | 450 | 575 | 6,086 | 591 | 2,170 |
| Holmes..... | 18,768 | | 18,768 | | 50 | | | 173 | | 242 | | | 5 | 3,754 |
| Jackson..... | 563,373 | 273,624 | 836,997 | 32.7 | 1,254 | 66 | 386 | 146 | 149 | 309 | 527 | 3,084 | 899 | 931 |
| Jefferson..... | 315,235 | 3,249,773 | 3,565,008 | 91.2 | 489 | 481 | 3,726 | 191 | 166 | 437 | 561 | 4,355 | 1,616 | 2,204 |
| Lawrence..... | 138,930 | 3,413,335 | 3,552,265 | 22.9 | 348 | 12 | 72 | 166 | 186 | 290 | 417 | 2,504 | 120 | 1,502 |
| Madison..... | 82,706 | 3,620 | 86,326 | 4.2 | 149 | 2 | 11 | 192 | 111 | 373 | 226 | 1,244 | 58 | 1,488 |
| Medina..... | 18,103 | | 18,103 | | 38 | | | 197 | | 336 | | | 17 | 1,065 |
| Meigs..... | 164,154 | 318,476 | 482,630 | 66.0 | 349 | 64 | 417 | 177 | 148 | 322 | 565 | 3,681 | 318 | 1,518 |
| Morgan..... | | 217,036 | 217,036 | 100.0 | 0 | | | | | | | | | |
| Muskingum..... | 302,205 | 436,947 | 739,152 | 30.8 | 460 | 43 | 283 | 176 | 124 | 439 | 682 | 3,700 | 107 | 2,028 |
| Noble..... | 25,106 | 183,742 | 208,848 | 87.9 | 71 | 31 | 208 | 177 | 123 | 277 | 593 | 2,025 | 172 | 2,540 |
| Perry..... | 193,300 | 1,914,750 | 2,108,050 | 90.8 | 371 | 320 | 2,430 | 148 | 138 | 353 | 583 | 3,919 | 154 | 1,352 |
| Portage..... | 71,358 | 17,185 | 88,543 | 19.4 | 156 | 12 | 24 | 169 | 139 | 318 | 483 | 4,266 | 1,092 | 1,930 |
| Scioto..... | 8,460 | | 8,460 | | 28 | | | 113 | | 226 | | | 17 | 498 |
| Stark..... | 447,526 | 76,526 | 524,052 | 14.6 | 1,030 | 24 | 78 | 146 | 143 | 314 | 713 | 2,318 | 381 | 1,374 |
| Summit..... | 64,469 | 38,830 | 103,299 | 37.6 | 118 | 10 | 55 | 154 | 122 | 346 | 824 | 1,782 | 71 | 1,455 |
| Trumbull..... | 7,534 | | 7,534 | | 21 | | | 179 | | 282 | | | 3 | 2,511 |
| Tuscarawas..... | 841,771 | 489,477 | 1,331,248 | 36.8 | 1,377 | 133 | 437 | 157 | 187 | 380 | 687 | 2,257 | 626 | 2,127 |
| Vinton..... | 58,254 | | 183,542 | 68.3 | 173 | 50 | 180 | 120 | 107 | 245 | 517 | 1,861 | 140 | 1,311 |
| Washington..... | 1,304 | | 1,304 | | 16 | | | 78 | | 53 | | | 9 | 1,415 |
| Wayne..... | 125,836 | 1,639 | 125,525 | 1.3 | 330 | 2 | 10 | 133 | 28 | 264 | 131 | 653 | 119 | 1,055 |
| Total..... | 4,676,869 | 21,610,931 | 26,287,800 | 82.2 | 8,997 | 3,167 | 24,862 | *160 | *157 | *350 | *589 | *1,627 | 13,225 | *1,988 |

*Average for State.



PERSONS EMPLOYED

TABLE SHOWING NUMBER PICK MINERS, INSIDE AND OUTSIDE DAY HANDS, TOTAL PICK TONNAGE, THE PER CENT. AS COMPARED WITH TOTAL OUTPUT OF EACH COUNTY, AND NUMBER OF DAYS MINERS WORKED IN EACH COUNTY.

| Counties. | Number Pick Miners Employed. | Number Inside Day Hands Employed. | Number Outside Day Hands Employed. | Total Number Persons Engaged in Pick Mining. | Kegs Powder Used in Pick Mining. | Total Tons Coal Produced by Pick Miners. | Per Cent. of Pick Mined Coal as Compared With Total Output in County. | Average No. Days Worked by Each Pick Miner During Year. |
|-----------------|------------------------------|-----------------------------------|------------------------------------|--|----------------------------------|--|---|---|
| Athens..... | 302 | 36 | 29 | 367 | 2,586 | 186,270 | 4.5 | 150 |
| Belmont..... | 286 | 61 | 46 | 393 | 1,024 | 183,900 | 3.3 | 155 |
| Carroll..... | 202 | 32 | 27 | 261 | 4,186 | 134,014 | 30.5 | 197 |
| Columbiana..... | 504 | 105 | 72 | 681 | 5,808 | 236,474 | 45.8 | 175 |
| Coshocton..... | 317 | 65 | 36 | 418 | 4,276 | 230,236 | 62.8 | 194 |
| Gallia..... | 82 | 13 | 9 | 104 | 288 | 13,692 | 100.0 | 75 |
| Guernsey..... | 129 | 19 | 12 | 160 | 534 | 41,673 | 1.4 | 141 |
| Harrison..... | 92 | 13 | 9 | 114 | 145 | 41,457 | 9.3 | 203 |
| Hocking..... | 255 | 28 | 25 | 308 | 1,596 | 162,761 | 12.7 | 191 |
| Holmes..... | 50 | 2 | 3 | 55 | 60 | 18,768 | 100.0 | 173 |
| Jackson..... | 1,254 | 420 | 197 | 1,871 | 26,984 | 563,373 | 67.3 | 146 |
| Jefferson..... | 489 | 71 | 46 | 606 | 586 | 315,235 | 8.8 | 191 |
| Lawrence..... | 348 | 48 | 41 | 437 | 3,198 | 138,930 | 77.1 | 166 |
| Mahoning..... | 149 | 28 | 24 | 201 | 1,379 | 82,706 | 95.8 | 192 |
| Medina..... | 38 | 8 | 9 | 55 | 671 | 18,103 | 100.0 | 197 |
| Meigs..... | 349 | 68 | 50 | 467 | 798 | 164,154 | 34.2 | 177 |
| Morgan..... | | | | | | | | |
| Muskingum..... | 460 | 59 | 36 | 555 | 12,191 | 302,205 | 69.2 | 176 |
| Noble..... | 71 | 19 | 9 | 99 | 327 | 25,106 | 12.1 | 177 |
| Perry..... | 371 | 45 | 36 | 452 | 4,057 | 193,300 | 9.2 | 148 |
| Portage..... | 156 | 65 | 39 | 260 | 5,105 | 71,358 | 80.6 | 169 |
| Scioto..... | 28 | 9 | 8 | 45 | 423 | 8,460 | 100.0 | 113 |
| Stark..... | 1,030 | 157 | 160 | 1,347 | 9,460 | 447,526 | 85.4 | 146 |
| Summit..... | 118 | 16 | 25 | 159 | 2,410 | 64,469 | 62.4 | 154 |
| Trumbull..... | 21 | 1 | 2 | 24 | 164 | 7,534 | 100.0 | 179 |
| Tuscarawas..... | 1,377 | 261 | 170 | 1,808 | 16,622 | 841,771 | 63.2 | 157 |
| Vinton..... | 173 | 29 | 16 | 218 | 3,032 | 58,254 | 31.7 | 120 |
| Washington..... | 16 | 6 | 3 | 25 | 65 | 1,304 | 100.0 | 78 |
| Wayne..... | 330 | 71 | 46 | 447 | 4,840 | 123,836 | 98.7 | 133 |
| Total..... | 8,997 | 1,755 | 1,185 | 11,937 | 112,815 | 4,676,869 | *17.8 | †160 |

NOTE:—

† Average number days worked by each pick miner during year was 160.

* Per cent. of pick coal as compared with total output for state is 17.8

TABLE SHOWING THE TOTAL NUMBER OF MEN EMPLOYED IN PICK MINING DURING THE YEAR 1908.

| Counties. | Total Number Pick Miners Employed. | Total Number Day Hands Inside. | Total Number Day Hands Outside. | Total Number Employes in Pick Mines. |
|-----------------|------------------------------------|--------------------------------|---------------------------------|--------------------------------------|
| Athens..... | 302 | 36 | 29 | 367 |
| Belmont..... | 286 | 61 | 46 | 393 |
| Carroll..... | 202 | 32 | 27 | 261 |
| Columbiana..... | 504 | 105 | 72 | 681 |
| Coshocton..... | 317 | 65 | 36 | 418 |
| Gallia..... | 82 | 13 | 9 | 104 |
| Guernsey..... | 129 | 19 | 12 | 160 |
| Harrison..... | 92 | 13 | 9 | 114 |
| Hocking..... | 255 | 28 | 25 | 308 |
| Holmes..... | 50 | 2 | 3 | 55 |
| Jackson..... | 1,254 | 420 | 197 | 1,871 |
| Jefferson..... | 489 | 71 | 46 | 606 |
| Lawrence..... | 348 | 48 | 41 | 437 |
| Mahoning..... | 149 | 28 | 24 | 201 |
| Medina..... | 38 | 8 | 9 | 55 |
| Meigs..... | 349 | 68 | 50 | 467 |
| Morgan..... | | | | |
| Muskingum..... | 460 | 59 | 36 | 555 |
| Noble..... | 71 | 19 | 9 | 99 |
| Perry..... | 371 | 45 | 36 | 452 |
| Portage..... | 156 | 65 | 39 | 260 |
| Scioto..... | 28 | 9 | 8 | 45 |
| Stark..... | 1,030 | 157 | 160 | 1,347 |
| Summit..... | 118 | 16 | 25 | 159 |
| Trumbull..... | 21 | 1 | 2 | 24 |
| Tuscarawas..... | 1,377 | 261 | 170 | 1,808 |
| Vinton..... | 173 | 29 | 16 | 218 |
| Washington..... | 16 | 6 | 3 | 25 |
| Wayne..... | 330 | 71 | 46 | 447 |
| Total..... | 8,997 | 1,775 | 1,185 | 11,937 |

TABLE SHOWING THE TOTAL NUMBER OF MEN EMPLOYED IN MACHINE MINING DURING THE YEAR 1908.

| Counties. | Total No. Machine Runners Employed. | Total No. Drillers, Loaders and Shoot- ers Em- ployed. | Total No. Inside Day Hands Em- ployed. | Total No. Outside Day Hands Employed. | Total No. Men Em- ployed in Machine Mines. |
|-----------------|--|---|---|--|--|
| Athens..... | 494 | 5,349 | 1,346 | 833 | 8,022 |
| Belmont..... | 734 | 5,452 | 1,298 | 625 | 8,109 |
| Carroll..... | 56 | 277 | 58 | 38 | 429 |
| Columbiana..... | 64 | 386 | 116 | 64 | 630 |
| Coshocton..... | 28 | 116 | 42 | 29 | 215 |
| Gallia..... | | | | | |
| Guernsey..... | 316 | 3,019 | 1,084 | 344 | 4,763 |
| Harrison..... | 52 | 375 | 81 | 45 | 553 |
| Hocking..... | 130 | 1,376 | 298 | 240 | 2,044 |
| Holmes..... | | | | | |
| Jackson..... | 66 | 386 | 191 | 91 | 734 |
| Jefferson..... | 481 | 3,736 | 870 | 629 | 5,716 |
| Lawrence..... | 12 | 72 | 15 | 16 | 115 |
| Mahoning..... | 2 | 11 | 4 | 2 | 19 |
| Medina..... | | | | | |
| Meigs..... | 64 | 417 | 119 | 81 | 681 |
| Morgan..... | 43 | 283 | 65 | 42 | 433 |
| Muskingum..... | 43 | 208 | 40 | 37 | 328 |
| Noble..... | 31 | 205 | 103 | 23 | 362 |
| Perry..... | 320 | 2,430 | 591 | 420 | 3,761 |
| Portage..... | 12 | 24 | 9 | 6 | 51 |
| Scioto..... | | | | | |
| Stark..... | 24 | 78 | 42 | 22 | 166 |
| Summit..... | 10 | 55 | 10 | 20 | 95 |
| Trumbull..... | | | | | |
| Tuscarawas..... | 133 | 437 | 121 | 74 | 765 |
| Vinton..... | 50 | 180 | 56 | 39 | 325 |
| Washington..... | | | | | |
| Wayne..... | 2 | 10 | 1 | 1 | 14 |
| Total..... | 3,167 | 24,882 | 6,560 | 3,721 | 38,330 |

TABLE SHOWING THE TOTAL NUMBER OF SHOOTERS AND LOADERS, RUNNERS, INSIDE AND OUTSIDE DAY HANDS AND THE TOTAL NUMBER OF PERSONS EMPLOYED IN AND AROUND THE MINES; ALSO THE TONS PRODUCED FOR EACH PERSON EMPLOYED.

| Counties. | Total Number Pick Miners, Shooters and Loaders. | Total Number Inside Day Hands in Both Pick and Machine Mines. | Total Number Outside Day Hands in Both Pick and Machine Mines. | Total Number Machine Runners. | Total Number All Persons Engaged in Production of Coal. | Total Number Kegs of Powder Used in Each County. | Total Number Tons Coal Produced in Both Pick and Machine Mines. | No. Tons Produced for Each Person Employed in and Around the Mines, 1908. |
|-----------------|---|---|--|-------------------------------|---|--|---|---|
| Athens..... | 5,651 | 1,382 | 862 | 494 | 8,389 | 24,216 | 4,170,095 | 497 |
| Belmont..... | 5,738 | 1,359 | 671 | 734 | 8,502 | 24,886 | 5,591,719 | 657 |
| Carroll..... | 479 | 90 | 65 | 56 | 690 | 5,841 | 439,080 | 636 |
| Columbiana..... | 890 | 221 | 136 | 64 | 1,311 | 7,360 | 516,780 | 394 |
| Coshocton..... | 433 | 107 | 65 | 28 | 633 | 5,562 | 366,805 | 579 |
| Gallia..... | 82 | 13 | 9 | ..... | 104 | 288 | 13,092 | 132 |
| Guernsey..... | 3,148 | 1,103 | 356 | 316 | 4,923 | 18,904 | 2,926,448 | 595 |
| Harrison..... | 467 | 94 | 54 | 52 | 667 | 2,581 | 447,805 | 671 |
| Hocking..... | 1,631 | 326 | 265 | 130 | 2,352 | 7,604 | 1,282,647 | 545 |
| Holmes..... | 50 | 2 | 3 | ..... | 55 | 60 | 18,768 | 341 |
| Jackson..... | 1,640 | 611 | 288 | 66 | 2,605 | 29,520 | 836,997 | 321 |
| Jefferson..... | 4,225 | 941 | 675 | 481 | 6,322 | 7,947 | 3,565,008 | 563 |
| Lawrence..... | 420 | 63 | 57 | 12 | 552 | 4,398 | 180,265 | 327 |
| Mahoning..... | 160 | 32 | 26 | 2 | 220 | 1,417 | 86,326 | 392 |
| Medina..... | 160 | 8 | 9 | ..... | 55 | 671 | 18,103 | 329 |
| Meigs..... | 766 | 187 | 131 | 61 | 1,148 | 1,929 | 482,630 | 420 |
| Morgan..... | 283 | 65 | 42 | 43 | 433 | 867 | 217,036 | 501 |
| Muskingum..... | 668 | 99 | 73 | 43 | 883 | 12,857 | 436,947 | 495 |
| Noble..... | 276 | 122 | 32 | 31 | 461 | 1,760 | 208,192 | 452 |
| Perry..... | 2,801 | 636 | 456 | 320 | 4,213 | 22,951 | 2,108,050 | 500 |
| Portage..... | 180 | 74 | 45 | 12 | 311 | 5,635 | 88,543 | 285 |
| Scioto..... | 28 | 9 | 8 | ..... | 45 | 423 | 8,460 | 188 |
| Stark..... | 1,108 | 199 | 182 | 24 | 513 | 10,037 | 524,052 | 1,021 |
| Summit..... | 173 | 26 | 45 | 10 | 254 | 2,981 | 103,299 | 407 |
| Trumbull..... | 21 | 1 | 2 | ..... | 24 | 164 | 7,534 | 314 |
| Tuscarawas..... | 1,814 | 382 | 244 | 133 | 2,573 | 21,234 | 1,331,248 | 517 |
| Vinton..... | 353 | 85 | 55 | 50 | 543 | 3,941 | 183,542 | 338 |
| Washington..... | 16 | 6 | 3 | ..... | 25 | 65 | 1,304 | 52 |
| Wayne..... | 340 | 72 | 47 | 2 | 1,461 | 4,884 | 125,525 | 86 |
| Total..... | 33,879 | 8,315 | 4,906 | 3,167 | 50,267 | 230,983 | 26,287,800 | *523 |

* Average.

NOTE:—

Average number tons produced by each person engaged in the production of coal was 523 tons.

TABLE SHOWING THE NUMBER OF PERSONS ENGAGED IN THE PRODUCTION OF COAL IN THE SEVERAL COUNTIES DURING THE YEAR 1908, AS COMPARED WITH 1907, AND GAINS AND LOSSES IN EACH COUNTY.

| Counties. | Number Pick Miners, Shooters and Loaders Employed in 1907. | Number Pick Miners, Shooters and Loaders Employed in 1908. | Machine Runners, 1907. | Machine Runners, 1908. | Inside Day Hands, 1907. | Inside Day Hands, 1908. | Outside Day Hands, 1907. | Outside Day Hands, 1908. | Total number Employees, 1907. | Total number Employees, 1908. | Gain. | Loss. |
|------------------|--|--|------------------------|------------------------|-------------------------|-------------------------|--------------------------|--------------------------|-------------------------------|-------------------------------|-------|-------|
| Athens | 5,031 | 5,651 | 453 | 494 | 1,306 | 1,382 | 766 | 862 | 7,556 | 8,389 | 833 | ..... |
| Belmont | 4,398 | 5,738 | 580 | 734 | 1,186 | 1,359 | 601 | 671 | 7,395 | 8,502 | 1,137 | ..... |
| Carroll | 428 | 479 | 58 | 56 | 120 | 90 | 73 | 65 | 679 | 696 | 11 | ..... |
| Columbiana | 874 | 890 | 53 | 64 | 202 | 221 | 133 | 136 | 1,282 | 1,311 | 49 | ..... |
| Coshocton | 439 | 453 | 27 | 28 | 118 | 107 | 75 | 65 | 659 | 633 | ..... | 26 |
| Gallia | 73 | 82 | ..... | ..... | 10 | 13 | 8 | 9 | 93 | 104 | 11 | ..... |
| Guernsey | 2,808 | 3,148 | 285 | 316 | 1,047 | 1,103 | 324 | 356 | 4,474 | 4,923 | 449 | ..... |
| Harrison | 389 | 467 | 57 | 52 | 92 | 94 | 75 | 54 | 604 | 667 | 63 | ..... |
| Hoeking | 1,562 | 1,631 | 129 | 139 | 395 | 326 | 280 | 265 | 2,337 | 2,352 | 15 | ..... |
| Holmes | 49 | 50 | ..... | ..... | 3 | 2 | 4 | 3 | 56 | 55 | ..... | 1 |
| Jackson | 1,806 | 1,640 | 122 | 66 | 741 | 611 | 343 | 288 | 3,019 | 2,606 | ..... | 414 |
| Jefferson | 3,698 | 4,225 | 431 | 481 | 991 | 941 | 667 | 675 | 5,787 | 6,322 | 535 | ..... |
| Lawrence | 472 | 420 | 10 | 12 | 89 | 63 | 50 | 57 | 621 | 553 | ..... | 68 |
| Mahoning | 181 | 160 | ..... | 2 | 33 | 32 | 28 | 26 | 242 | 220 | ..... | 22 |
| Medina | 82 | 38 | ..... | ..... | 19 | 8 | 15 | 9 | 116 | 55 | ..... | 61 |
| Meigs | 569 | 766 | 52 | 64 | 169 | 187 | 102 | 131 | 883 | 1,148 | 265 | ..... |
| Morgan | 302 | 283 | 46 | 43 | 74 | 65 | 39 | 42 | 451 | 433 | ..... | 18 |
| Muskingum | 559 | 668 | 37 | 43 | 102 | 99 | 71 | 73 | 772 | 883 | 111 | ..... |
| Noble | 235 | 276 | 27 | 31 | 98 | 122 | 24 | 32 | 384 | 461 | 77 | ..... |
| Perry | 2,902 | 2,801 | 353 | 320 | 897 | 636 | 527 | 456 | 4,679 | 4,213 | ..... | 466 |
| Portage | 122 | 180 | 20 | 12 | 44 | 74 | 28 | 45 | 214 | 311 | 97 | ..... |
| Scioto | 33 | 28 | ..... | ..... | 12 | 9 | 9 | 8 | 54 | 45 | ..... | 9 |
| Stark | 1,109 | 1,108 | 33 | 24 | 217 | 399 | 207 | 182 | 1,565 | 513 | ..... | 1,052 |
| Summit | 256 | 173 | 10 | 10 | 51 | 26 | 58 | 45 | 375 | 254 | ..... | 121 |
| Trumbull | 7 | 21 | ..... | ..... | ..... | 1 | ..... | 2 | 7 | 24 | 17 | ..... |
| Tuscarawas | 1,747 | 1,814 | 131 | 133 | 458 | 382 | 282 | 244 | 2,618 | 2,573 | ..... | 45 |
| Vinton | 380 | 353 | 48 | 50 | 87 | 85 | 58 | 55 | 583 | 543 | ..... | 40 |
| Washington | 2 | 16 | ..... | ..... | 6 | 2 | 3 | 6 | 25 | 19 | ..... | ..... |
| Wayne | 399 | 340 | ..... | 2 | 67 | 72 | 49 | 47 | 415 | 1,461 | 1,046 | ..... |
| Total | 31,406 | 33,879 | 2,962 | 3,167 | 8,630 | 8,315 | 4,877 | 4,906 | 47,876 | 50,267 | 4,735 | 2,344 |

Note:—

Gain in 1908 as compared with 1907.....2,391 men

TABLE SHOWING NUMBER OF DAY HANDS EMPLOYED IN BOTH PICK AND MACHINE MINES, ALSO TOTAL NUMBER IN ALL THE MINES, AND NUMBER TONS COAL PRODUCED FOR EACH, PER YEAR AND PER DAY.

| Counties. | Average No. Days Worked in Pick Mines for Year. | Number Day Hands Employed in Pick Mines. | Average No. Tons Produced for Each Day Hand for Year in Pick Mines. | Average No. Tons Produced for Each Day Hand Per Day in Pick Mines. | Average No. Days Worked in Machine Mines. | Number Day Hands Employed in Machine Mines. | Average No. Tons Produced for Each Day Hand for Year in Machine Mines. | Average No. Tons Produced for Each Day Hand Per Day in Machine Mines. | Total Number Day Men Em- ployed for Year 1908. | Total Tons Produced, All Grades. | Average Tons Mined for Each Day Hand for the Year in Both Pick and Machine Mines. |
|-----------------|--|---|---|--|--|--|--|---|---|----------------------------------|---|
| Athens..... | 159 | 65 | 2,866 | 19 | 138 | 2,179 | 1,828 | 13 | 2,244 | 4,170,995 | 1,859 |
| Belmont..... | 155 | 107 | 1,719 | 11 | 174 | 1,923 | 2,812 | 16 | 2,030 | 5,591,719 | 2,755 |
| Carroll..... | 197 | 59 | 2,271 | 12 | 143 | 96 | 3,178 | 22 | 155 | 439,080 | 2,326 |
| Columbiana..... | 175 | 177 | 1,336 | 8 | 166 | 180 | 1,557 | 9 | 357 | 516,780 | 1,448 |
| Cochocton..... | 191 | 101 | 2,289 | 12 | 180 | 71 | 1,923 | 11 | 172 | 346,805 | 2,133 |
| Gallia..... | 75 | 22 | 622 | 8 | ..... | ..... | ..... | ..... | 22 | 13,692 | 622 |
| Guernsey..... | 141 | 31 | 1,344 | 10 | 168 | 1,428 | 2,020 | 12 | 1,459 | 2,926,448 | 2,006 |
| Harrison..... | 203 | 22 | 1,884 | 9 | 186 | 126 | 3,225 | 17 | 148 | 447,805 | 3,026 |
| Hocking..... | 191 | 53 | 3,071 | 16 | 163 | 538 | 2,082 | 13 | 591 | 1,282,647 | 2,170 |
| Holmes..... | 173 | 5 | 3,754 | 22 | ..... | ..... | ..... | ..... | 5 | 18,768 | 3,754 |
| Jackson..... | 149 | 617 | 913 | 6 | 149 | 282 | 970 | 6 | 899 | 836,997 | 931 |
| Jefferson..... | 191 | 117 | 2,694 | 14 | 169 | 1,490 | 2,168 | 13 | 1,616 | 3,365,008 | 2,204 |
| Lawrence..... | 166 | 89 | 1,561 | 9 | 186 | 31 | 1,333 | 7 | 120 | 180,265 | 1,502 |
| Mahoning..... | 192 | 52 | 1,590 | 8 | 111 | 6 | 603 | 5 | 58 | 86,326 | 1,488 |
| Medina..... | 197 | 17 | 1,065 | 5 | ..... | ..... | ..... | ..... | 17 | 18,103 | 1,065 |
| Meigs..... | 177 | 118 | 1,391 | 8 | 148 | 200 | 1,592 | 11 | 318 | 482,630 | 1,518 |
| Morgan..... | ..... | ..... | ..... | ..... | 124 | 107 | 2,028 | 16 | 107 | 217,036 | 2,028 |
| Muskingum..... | 176 | 95 | 3,181 | 18 | 127 | 77 | 1,749 | 14 | 172 | 436,947 | 2,540 |

| | | | | | | | | | | | |
|-----------------|------|--------|--------|-----|-------|---------|--------|-------|---------|-------------|--------|
| Noble..... | 177 | 28 | 807 | 5 | 123 | 126 | 1,453 | 12 | 154 | 208,192 | 1,352 |
| Perry..... | 148 | 81 | 2,386 | 16 | 138 | 1,011 | 1,893 | 14 | 1,092 | 2,108,050 | 1,930 |
| Portage..... | 169 | 104 | 686 | 4 | 139 | 15 | 1,145 | 8 | 119 | 88,543 | 744 |
| Scoto..... | 113 | 17 | 498 | 4 | ..... | ..... | ..... | ..... | 17 | 8,460 | 498 |
| Stark..... | 146 | 317 | 1,412 | 10 | 143 | 64 | 1,174 | 8 | 381 | 524,052 | 1,376 |
| Summit..... | 154 | 41 | 1,572 | 10 | 122 | 30 | 1,294 | 10 | 71 | 103,299 | 1,455 |
| Trumbull..... | 179 | 3 | 2,511 | 14 | ..... | ..... | ..... | ..... | 3 | 7,534 | 2,511 |
| Tuscarawas..... | 157 | 431 | 1,953 | 12 | 187 | 195 | 2,510 | 13 | 626 | 1,331,248 | 2,127 |
| Vinton..... | 120 | 45 | 1,294 | 10 | 107 | 95 | 1,319 | 12 | 140 | 183,542 | 1,311 |
| Washington..... | 78 | 9 | 145 | 2 | ..... | ..... | ..... | ..... | 9 | 1,304 | 145 |
| Wayne..... | 133 | 117 | 1,058 | 8 | 28 | 2 | 845 | 30 | 119 | 125,525 | 1,055 |
| Total..... | *160 | †2,940 | *1,589 | *10 | *157 | †10,281 | *2,102 | *13 | †13,221 | †26,287,800 | *1,988 |

† Total.

* Average for the state.

NOTE.

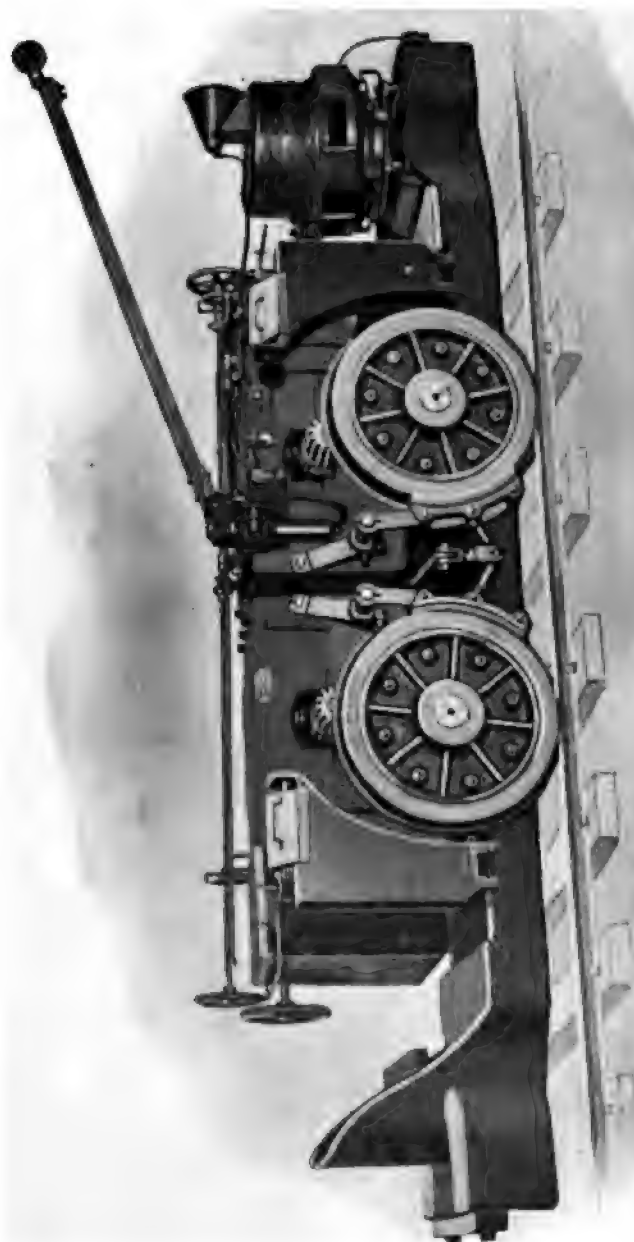
Average tons produced for each day hand for the year in Pick Mines..... 1,591
 Average tons produced for each day hand per day in Pick Mines..... 10
 Average tons produced for each day hand for the year in Machine Mines..... 2,102
 Average tons produced for each day hand per day in Machine Mines..... 13
 Average tons produced for each day hand in the state for the year..... 1,988
 Average tons produced for each day hand in the state per day..... 13

MINING MACHINERY

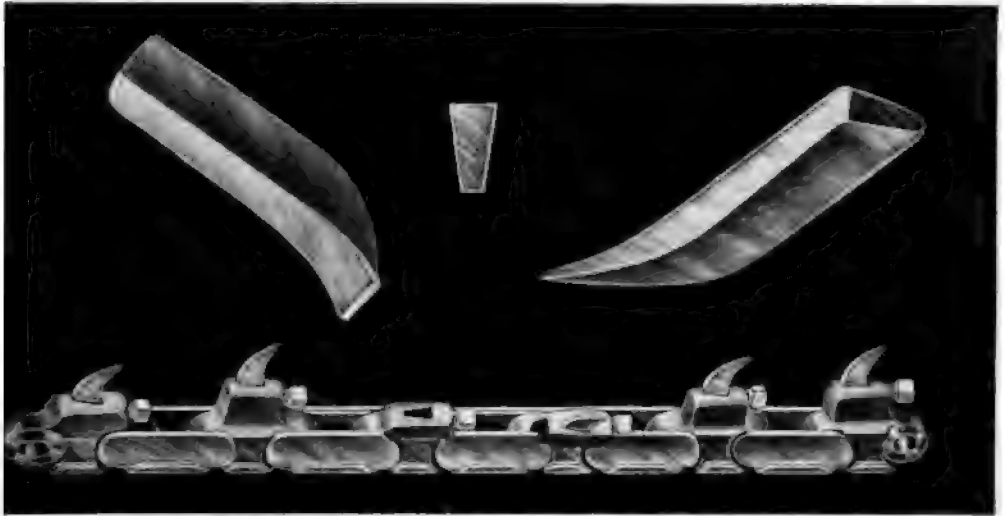




MORGAN GARDNER HEAVY "D" MACHINE MOUNTED ON TRUCK. SIDE VIEW, SHOWING PRINCIPAL WORKING PARTS.



MORGAN GARDNER STANDARD LOCOMOTIVE EQUIPPED WITH GATHERING "CRAB." MAY BE USED FOR ENTRY WORK AND GATHERING FROM ROOMS.

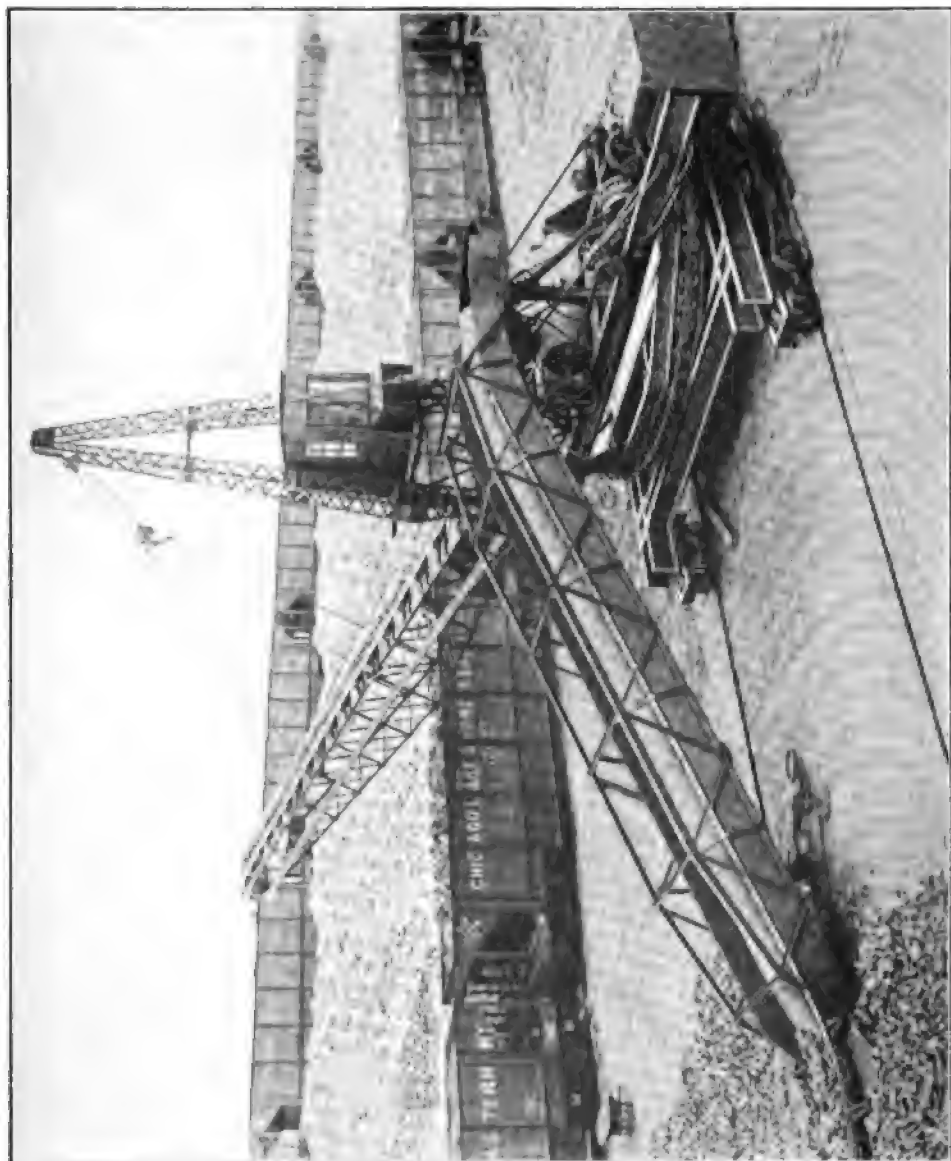


MORGAN GARDNER "KEYSTONE" CHAIN SHOWING CROSS SECTION OF STEEL; "PICK" AND "CHISEL" POINT BITS.

THE "KEYSTONE" BIT.

The "Keystone" Cutting Bits are made from a very superior quality of steel, rolled specially to our order. The shape of the bit makes it possible to keep the cutting edge constantly to the working and allow plenty of "back clearance," thus avoiding the strain incident to operating the old square type of bits after their points become dulled. The "back clearance" afforded by the "Keystone" type of bits practically eliminates the vertical twisting strain on the Side Links, runs freely through the guides and cutter head, requires less power, and permits many additional runs to be made without sharpening.

The "Keystone" Bit is easily forged, and owing to its shape will keep sharp very much longer than the old square bits. The cutting point and set screw being nearer together in the "Keystone" type, more of the steel can be used and less thrown away. The "Keystone" bits are all straight and uniform in length, consequently easily adjusted in the chain, as there are no "Rights" and "Lefts" with difficult angles to form. The "Keystone" shape gives maximum of strength with minimum of metal. The "Keystone" Chain and Bits make coarse cuttings, ranging from "pea" to "nut" coal, and reduces the fine dust by a large per-



THE HAMILTON STORAGE AND RELOADING MACHINE.

The machine illustrated in the foregoing is the latest innovation in material handling devices, operates on its own track, which is centrally located on a storage platform. The machine shown is at The Illinois Steel Company storage plant at Stockton, Indiana. The company has upwards of 100,000 tons of coke stored at this point that this machine is handling without breakage.

This single machine both puts the material into storage and takes it therefrom at the CONTINUOUS rate of five tons a minute. Three men operate the machine, two being laborers. The cost per ton for handling is less than one cent. There is no investment in equipment aside from the machine itself, and a trestle (or conveyor belt) at the side of the yard. The machine moves as it builds or reloads the pile, all along the length of the platform.

With a low priced, efficient machine on the market, the storage of coal at the mines, as well as the yards, will shortly become general. At present very few coal mines are equipped with storage facilities, and those that are have a capacity of perhaps 500 or 1,000 tons, usually in bins, a very costly form of storage. Commonly the coal is brought directly from the rooms where it is mined, hoisted to the tipples, run over the screens, and delivered directly into the railway cars. When there are no railway cars at hand the mine shuts down. It can be safely said that the mines of the United States are shut down 25 per cent. of the time on this account, as it is impossible for railways to deliver as needed the exact proportion of cars that every mine should have.

The reason that storage has not been adopted at coal mines and yards is the very high cost of ordinary installations, and also the fact that with common methods of handling coal and coke there is a large percentage of breakage to the coal.

Another reason that exists for storage of coal and coke at coal mines is that the demand for both of these commodities is bound to be irregular. The mine that has 10,000 tons of coal in storage, which can be loaded out by the train load at the rate of five tons a minute, will get orders that those lacking these facilities would lose. The operator, in other words, will be able to load cars when he gets them. And this is another point in favor of the storage at mines, for at times the railway company can deliver more cars than are needed, and these the operator can fill at his discretion, without increasing the cost of his product more than one cent a ton.

It is the intention to place run of mine coal into storage, but in loading it out the machine will deliver any size of coal that may be desired, as it is provided with screens that will properly clean the coal.

Not only will the operator benefit by this storage, but the railway companies, as well, as the latter will be relieved of the necessity of providing a uniform number of cars to their clients. These cars will be loaded much more rapidly and the supply of coal will be made much more continuous and regular. When it is used continuously it will save enough money to pay for itself in a year.

The amount of coal handled by the ordinary retail coal yard does not justify the installation of as large a machine as the one above referred to. The Hamilton Manufacturing Company build a smaller size for coal and coke yards.

The use of coal pockets in retail yards is growing, and even where the expense is considerable, has been found to pay the yard owner. The retail coal yard loading machine can be installed at less expense than pockets. It has larger capacity and will handle the fuel into and out of storage at less cost.

The machine will load freight cars or wagons at the rate of a ton and a half to two tons a minute. The arrangement of the yard would depend upon the amount of ground available, and upon the nature of the business.

This yard machine is equipped with screens, and hence, will enable the coal man to purchase run of mine coal, re-handle this at a low cost and give to his customers the coal that is in greatest demand on any particular day. The losses in sales, due to inability to furnish the exact kind of coal that the customer wants, are well known to the coal trade.

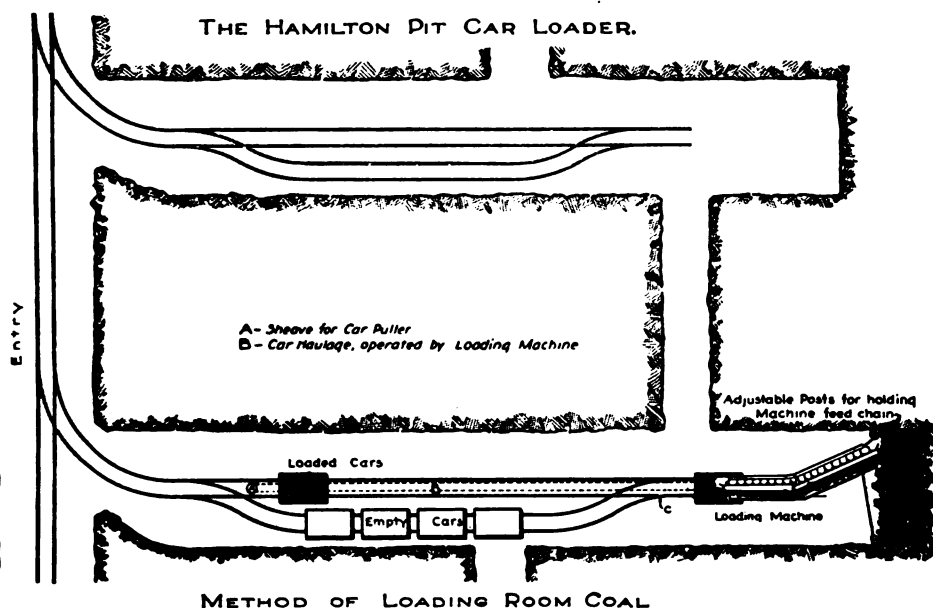
Each yard, while using the same machine, would be arranged somewhat differently, to suit local conditions, and the company will be very glad to have its engineers submit the layout of yard suited to individual needs.

THE HAMILTON MANUFACTURING CO.,
COLUMBUS, OHIO, U. S. A.



THE HAMILTON PIT CAR LOADER DECREASES COST OF LOADING THIRTY-THREE AND ONE-THIRD PER CENT.

Picks up from the mine floor 1,000 pounds of coal a minute, without stirring up any dust. Works in veins (as low as 4 feet), that permit the use of any of the undercutting machines. Handles the loads and empties to and from the cross entry. Is provided with a Picking Table, whereon slate and bone coal may be separated from the good coal. Is operated either by compressed air or electricity. Requires but 7 H. P. Loads out a thirty-five-ton room in two hours' time. Decreases the working territory required for a given output, 50%, and as a consequence proportionately cuts down the cost of production of coal in the matter of haulage, timber and tracking. The Hamilton Manufacturing Co., Columbus, Ohio, U. S. A. ventilation at a greatly decreased cost.

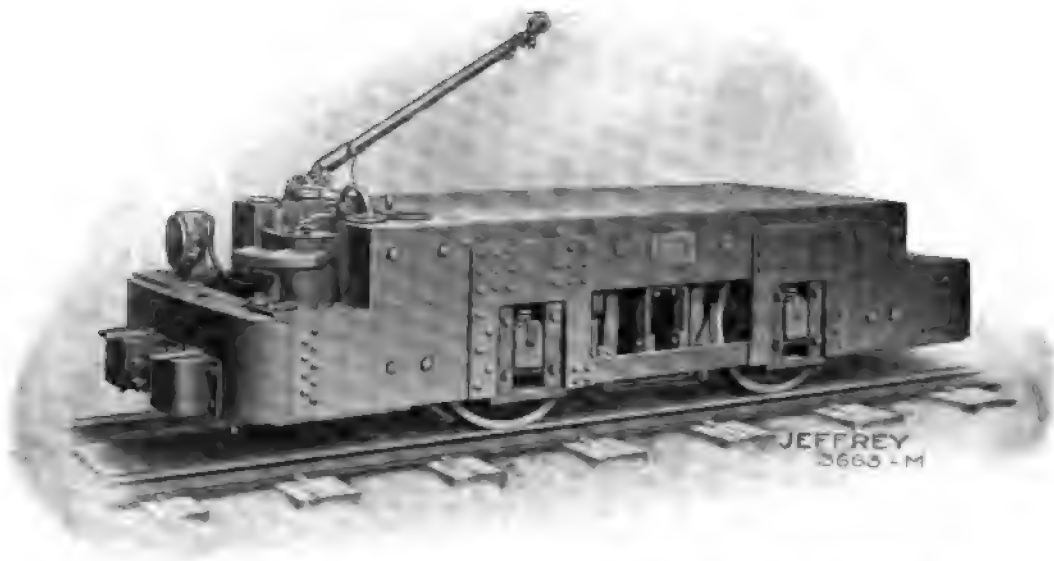


The Hamilton Manufacturing Company, of Columbus, Ohio, manufacturers of the Pit-Car Loader, have settled upon the track arrangement in the rooms shown in the above illustration, but varying conditions will necessitate some modifications of the plans shown.

If the loading machine operates in rooms from eighteen to twenty feet wide and under conditions at the face that permit the use of chain-undercutting machines, the diagram herewith shown indicates the proper method of laying out the room track, which should be of iron.

Just inside of the room neck is a storage track for empty cars which the machine is to load within a given time between motor trips. This siding is connected with the room track at both ends—ordinary switch points being used—thus constituting a run-around. The length of the siding would depend upon the capacity of the pit cars used. For machine loading it is obvious that the pit cars should be as large as possible, as the time in shifting a three or four-ton car is no greater than that taken in handling a one-ton car.

Where the mine is equipped for the use of pit-car loaders the cost of this run-around is comparatively trifling. The frogs would be cast; and, indeed, the whole turn-out connections would be stock material which could be shifted from one room to another as the rooms are worked out. It must be remembered in this connection that the loading machine will permit a room to be worked out in one-fourth of the time taken by hand loaders, and therefore all room track and timber will give three or four times the ordinary service. The only additional charge against loading machines would thus be the actual cost of the labor required to lay this portable section of track. In a seven-foot seam this charge amounts to less than one-half cent a ton on the room coal, and even this is partly offset by the saving effected in timber and track.



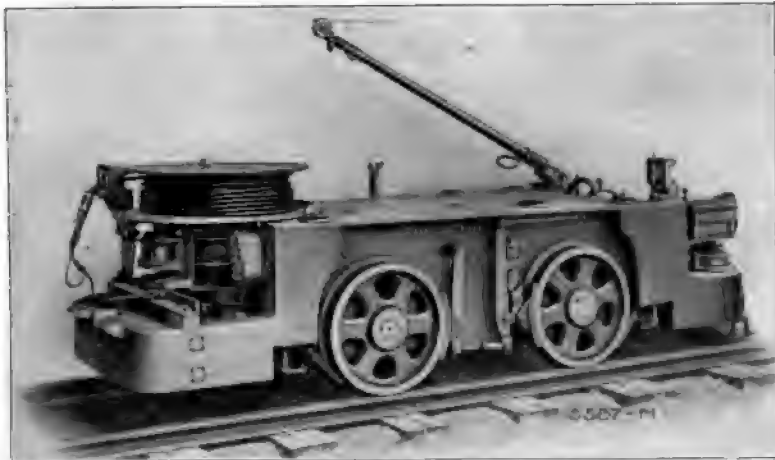
Cut 3663 shows a steel frame haulage locomotive recently introduced by the Jeffrey Mfg. Co. This construction allows very heavy motor equipment for a given weight locomotive, and is necessary where the grades are heavy and the hauls long.



Cut 2964. Standard 10-ton locomotive installed at the mines of the Alma Cement Co., Oretton, Ohio.



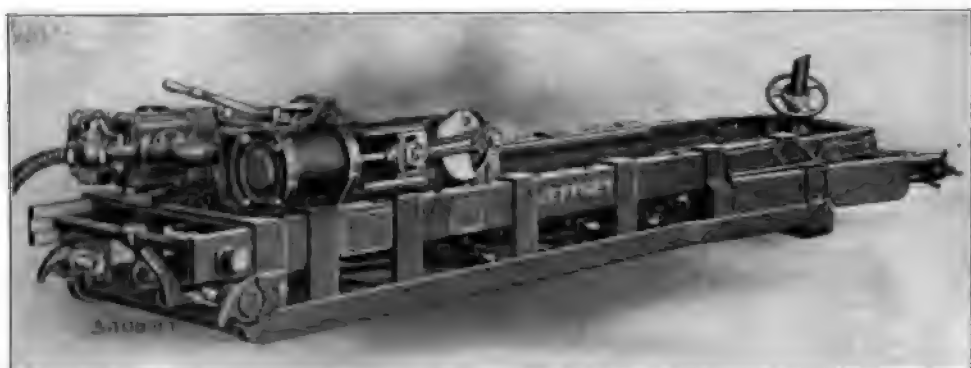
Cut 3670 shows new Jeffrey short-wall mining machine which is used for room and pillar work on the long-wall plan. After making the sumping cut this machine cuts across the face without coming out from under the coal.



Cut 3567 shows a Jeffrey combination cable reel and crab gathering locomotive. The top of the locomotive has a reel carrying an electric cable which allows the locomotive to run to the face of the coal without a trolley wire. Underneath this reel is a smaller reel carrying $\frac{3}{8}$ -inch steel cable, which allows the cars to be pulled out of the rooms without the locomotive entering. Both cable reels are run from an independent motor and suitable clutches provide for throwing one reel or the other or both in connection with the motor. The control of all the features is from the motorman's seat.



Cut 2739 shows 5-ton crab locomotive hauling a car out of the room at the Chapman Mining Co., Moxahala, O.



Cut 3408 shows our standard breast chain coal cutter provided with air engine.



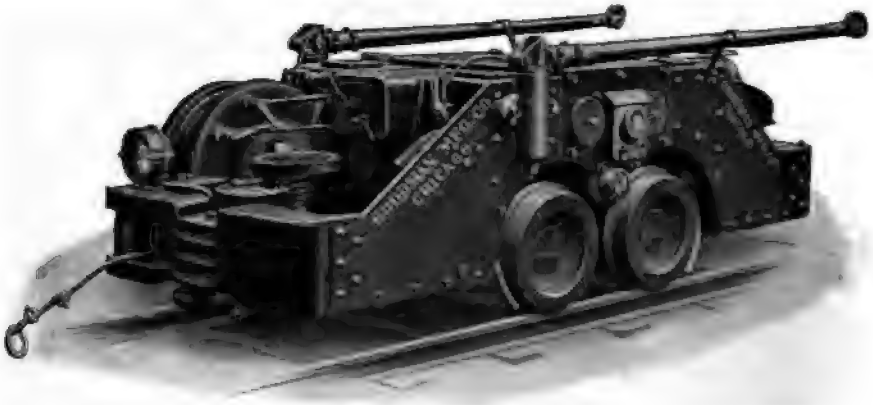
Cut 3128 shows a heavy service electric auger drill which is being used by a number of companies in the Hocking Valley for taking down the top on a day rate. The drill equipment is of ample capacity to drill any kind of material that an auger point will penetrate.



Cut 2963 shows our low pressure propeller fan for use in mine work.



Cut 2566 shows our high pressure centrifugal fan which is built in all capacities.



GOODMAN "ROAN TYPE" GATHERING LOCOMOTIVE.

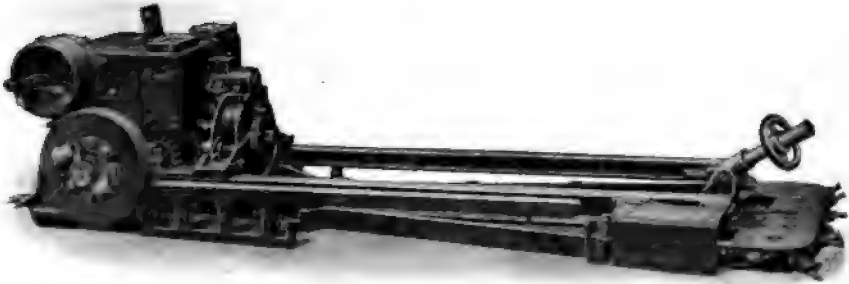
Recent developments in improvement of the Goodman "Roan Type" locomotive for gathering service have led to the production of the locomotive here illustrated. This is truly a universal locomotive, inasmuch as it is equipped to operate under almost any possible complication of mining conditions and do almost anything which may be required of it in the work of handling mine cars to and from the face. Not only has this locomotive the automatic reel of electric conductor cable for use when working into the rooms or up to the entry face beyond the trolley wiring, but it is fitted also with a power-driven drum and steel haulage cable by means of which the locomotive, set in any position, may reach to a distance, either into a room or along the entry, to get a car to be hauled out or a machine to be shifted.

In mining a pitching coal seam, for instance, where side entries are driven on the level and rooms are worked down the dip, the grade in the rooms may be too steep for traction locomotive operation, or the roof too low to permit a locomotive to enter the rooms. These and similar conditions impose special requirements upon the gathering proposition, calling for a locomotive of wide adaptability.

The Goodman "Roan Type" locomotive has a single motor, geared with all necessary flexibility to both axles and also to the drum of the steel haulage cable. The gearing to axles and cable drum are controlled by clutches in such manner that both may be operated together or either may be operated separately.

The locomotive frame is built with steel sides and ends, bolted firmly together and making a very strong construction. Extending beneath the axles, from one bumper to the other, are continuous pieces so arranged that all stresses, both tension and thrust, are transmitted from end to end of the locomotive in a straight line.

This locomotive may be furnished without the electric conductor reel or the steel haulage cable drum, or both.



GOODMAN MINING MACHINE WITH CHAIN GUARD FLAME-PROOF ELECTRICAL PARTS.

GOODMAN CHAIN BREAST MINING MACHINE.

Conformity with latest practice and highest development in mining machinery design is shown by the Goodman Manufacturing Company's electric chain breast machine, with guarded chain and flame-tight electric parts. The Goodman Company has been making flame-tight machines for years and has furnished many of them for use in districts where conditions require such precaution. The illustration indicates the general appearance of the flame-tight construction, as also the extremely effective manner in which the chain guard protects the runner and his helper from injury by accidental contact with the bits when the machine is in operation.

TABLE SHOWING THE NUMBER AND MAKE OF MINING MACHINES IN USE IN THE TWENTY-THREE COAL-PRODUCING COUNTIES, AND POWER BY WHICH THEY ARE OPERATED.

| Counties. | Electric. | | | | | Total Electric. | Compressed Air. | | | | Total Compressed Air. | Grand Total. |
|------------------|-----------|-----------------|-------------------|----------|-----------|-------------------|-----------------|-----------|------------------|----------|-----------------------|--------------|
| | Jeffrey. | Morgan-Gardner. | General Electric. | Goodman. | Sullivan. | Herzler-Heminger. | Jeffrey. | Harrison. | Ingersoll-Sergt. | Goodman. | | |
| Athens | 40 | 101 | | 53 | | | 194 | | 1 | | 1 | 195 |
| Belmont | 121 | 76 | | 64 | | | 261 | 19 | | | 19 | 280 |
| Carroll | 21 | 7 | | 1 | | | 29 | | | | | 29 |
| Columbiana | 9 | 17 | | 3 | | | 33 | | 5 | | 5 | 38 |
| Coshocton | 9 | | | | | | 9 | | 6 | | 6 | 15 |
| Guernsey | 24 | 71 | 7 | 9 | 4 | | 115 | 1 | | | 1 | 116 |
| Harrison | 14 | 7 | | | | | 21 | | | | | 21 |
| Hooking | 26 | 21 | | | | | 47 | 3 | | | 3 | 50 |
| Jackson | 67 | 2 | 2 | | | | 73 | | | | | 73 |
| Jefferson | 128 | 13 | | 95 | | | 238 | | | | | 238 |
| Lawrence | 2 | | | | | | 2 | | | | | 2 |
| Mahoning | | 1 | | | | | 1 | | | | | 1 |
| Meigs | 5 | 25 | | 4 | 1 | | 35 | | | | | 35 |
| Morgan | 10 | 4 | | | | | 14 | | | | | 14 |
| Muskingum | 9 | 15 | | | | | 24 | | | | | 24 |
| Noble | 7 | 4 | | | | | 11 | | | | | 11 |
| Perry | 98 | 45 | | 5 | | | 148 | 5 | | | 5 | 153 |
| Portage | | | | | | | | | 8 | | 8 | 8 |
| Stark | 3 | | | 10 | | | 13 | 11 | 5 | | 16 | 29 |
| Summit | | | | | | | | | | 3 | 3 | 3 |
| Tuscarawas | 1 | 19 | | 2 | 1 | | 23 | 19 | 43 | | 62 | 85 |
| Vinton | 15 | 7 | | | | | 22 | | | | | 22 |
| Wayne | | | | 3 | | | 3 | | | | | 3 |
| Total | 609 | 435 | 9 | 251 | 8 | 1,316 | 15 | 44 | 67 | 3 | 129 | 1,445 |

Note—

Total machines of all kinds in use in 1908..... 1,445

Total machines of all kinds in use in 1907..... 1,396

Showing gain of..... 49

TABLE SHOWING THE NUMBER AND MAKE OF HAULAGE MOTORS IN USE IN THE VARIOUS COUNTIES OF THE STATE IN 1908.

| Counties. | Jeffrey. | Morgan-Gardner. | Goodman. | General Electric. | Baldwin-Westinghouse. | Westinghouse. | Link-Belt. | Sperry Electric. | Total Motors. |
|-----------------|----------|-----------------|----------|-------------------|-----------------------|---------------|------------|------------------|---------------|
| Athens..... | 14 | 21 | 19 | 2 | 2 | ..... | 1 | 1 | 60 |
| Belmont..... | 27 | 27 | 26 | ..... | 1 | 19 | ..... | ..... | 100 |
| Carroll..... | 5 | 3 | 2 | ..... | ..... | ..... | ..... | ..... | 10 |
| Columbiana..... | ..... | 7 | 1 | ..... | ..... | ..... | ..... | ..... | 8 |
| Coshocton..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 4 |
| Guernsey..... | 16 | 12 | 15 | ..... | ..... | 1 | ..... | ..... | 44 |
| Harrison..... | 3 | 2 | ..... | ..... | ..... | ..... | ..... | ..... | 5 |
| Hocking..... | 4 | 3 | 3 | ..... | ..... | ..... | ..... | ..... | 10 |
| Jackson..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 4 |
| Jefferson..... | 22 | 14 | 17 | ..... | 3 | 13 | ..... | ..... | 69 |
| Lawrence..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Meigs..... | ..... | 5 | 1 | ..... | ..... | ..... | ..... | ..... | 6 |
| Morgan..... | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 |
| Muskingum..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... | ..... | 5 |
| Noble..... | 1 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 2 |
| Perry..... | 28 | 12 | 1 | ..... | ..... | ..... | ..... | ..... | 41 |
| Stark..... | ..... | ..... | 2 | ..... | ..... | ..... | ..... | ..... | 2 |
| Tuscarawas..... | 2 | 4 | 1 | ..... | ..... | ..... | ..... | ..... | 7 |
| Vinton..... | 1 | 2 | ..... | ..... | ..... | ..... | ..... | ..... | 3 |
| Total..... | 134 | 118 | 88 | 2 | 6 | 33 | 1 | 1 | 383 |

NOTE—

Total number motors in use in 1908..... 383

Total number motors in use in 1907..... 359

Gain over 1907..... 24

MINES AND MODE OF VENTILATION

TABLE SHOWING NUMBER OF MINES OPENED, SUSPENDED AND ABANDONED DURING THE YEAR 1908, AS REPORTED BY THE DISTRICT MINE INSPECTORS.

| Counties. | New Mines. | Suspended. | Abandoned. |
|-----------------|------------|------------|------------|
| Athens..... | 3 | 13 | .... |
| Belmont..... | ... | 6 | 1 |
| Carroll..... | ... | 2 | 1 |
| Columbiana..... | 2 | 2 | .... |
| Coshocton..... | 3 | ... | 1 |
| Gallia..... | ... | 1 | .... |
| Guernsey..... | 3 | 3 | 1 |
| Harrison..... | ... | 3 | 1 |
| Hocking..... | 8 | 1 | 2 |
| Jackson..... | 4 | 15 | 7 |
| Jefferson..... | 2 | 7 | 2 |
| Lawrence..... | 3 | 3 | 3 |
| Medina..... | 1 | ... | .... |
| Meigs..... | 4 | 4 | 1 |
| Muskingum..... | 4 | 2 | .... |
| Noble..... | 1 | 1 | .... |
| Ottawa..... | ... | 1 | .... |
| Perry..... | 4 | 7 | 2 |
| Scioto..... | ... | 1 | 6 |
| Stark..... | 6 | 9 | 1 |
| Summit..... | 1 | ... | 2 |
| Tuscarawas..... | 4 | 3 | 3 |
| Vinton..... | 1 | 3 | .... |
| Wayne..... | 1 | 2 | 3 |
| Total..... | 55 | 89 | 37 |

**DETAILED LIST OF MINES OPENED UP, SUSPENDED AND
ABANDONED DURING THE YEAR 1908.**

ATHENS COUNTY.

| New Mines | Suspended. | Abandoned. |
|--|--|------------|
| Bailey's Run S. C. No. 212. Glouster Domestic. | Winchester. No. 252. No. 312. No. 210. No. 254. No. 204. No. 275. No. 205. Wells & Goodspeed. Doanville No. 1 A. Juniper No. 1. Maple Hill. Big Run. | |

BELMONT COUNTY.

| | | |
|--|---|--------|
| | Summit No. 1. Summit No. 2. O. & W. Va. Kings Run. Cochran No. 2. Gaylord No. 2. | Wegee. |
|--|---|--------|

CARROLL COUNTY.

| | | |
|--|--|-----------------|
| | Greer Beatty No. 5. Greer Beatty No. 6. | Sterling No. 2. |
|--|--|-----------------|

COLUMBIANA COUNTY.

| | | |
|------------------------------|------------------------------------|--|
| Fairfield No. 3. Delmore. | Prospect No. 1. Prospect No. 2. | |
|------------------------------|------------------------------------|--|

COSHOCTON COUNTY.

| | | |
|---|--|---------------|
| Conesville No. 1 and No. 2. Forest Hill. Warwick. | | Locust Grove. |
|---|--|---------------|

GALLIA COUNTY.

| | | |
|--|-------------|--|
| | Swan Creek. | |
|--|-------------|--|

GUERNSEY COUNTY.

| New Mines. | Suspended. | Abandoned. |
|--|---|-------------------|
| West Branch. Walhonding No. 2. Valley. | Old Orchard. Ohio No. 1. Leatherwood No. 2. | Walhonding No. 1. |

HARRISON COUNTY.

| | | |
|--|---------------------------------|--------------|
| | Ewing. Adena. Tippecanoe. | Clover Leaf. |
|--|---------------------------------|--------------|

HOCKING COUNTY.

| | | |
|--|----------------------|--|
| George Price. Star Hocking. Lost Run No. 4. Prosperity. Royal. New Pittsburg No. 2. Copperhead. Rockquerry. | New Pittsburg No. 6. | New Pittsburg No. 2. Hocking Fuel (old hill). |
|--|----------------------|--|

JACKSON COUNTY.

| | | |
|---|---|---|
| Alma No. 2. Dewitt No. 5. Shook. Globe Iron Co | Peerless. Superior No. 11. Elkhorn. Washington. Ohio Portland Cement No. 4 and No. 5. Emma No. 4. Symms Creek. Zagelmyer No. 1. Zagelmyer No. 2. Ridgeland. Gem City. Victor Royal No. 2. Woodrow No. 1. Commercial. Wills. | Comet No. 1. Standard. D. C. I. No. 1. Superior No. 2. Fluhart No. 3. Globe. Sharp. |
|---|---|---|

JEFFERSON COUNTY.

| | | |
|--------------------------------------|---|--------------------------------|
| Nicholson Clay Mine. Cabbage Run. | Dorothy. Carman No. 1. Carman No. 2. Deal. Ohio Valley. Ohio Valley Clay. Great Western Clay. | Long Run. Strip Vein No. 4. |
|--------------------------------------|---|--------------------------------|

LAWRENCE COUNTY.

| New Mines. | Suspended. | Abandoned. |
|--|--|--|
| York Portland Cement. Willard No. 2. Feinup No. 5. | Belfont. Deegans. Holcomb No. 4. | Scherer. Lynd. Black Fork No. 6. |

MEDINA COUNTY.

| | | |
|-----------|--|--|
| Berkbank. | | |
|-----------|--|--|

MEIGS COUNTY

| | | |
|--|---|---------------|
| Schlagel. Buckeye Splint No. 3. Edwards Bros. Thomas. | Peacock No. 2 and No. 3. Red Bird. Coal Ridge. Syracuse Slope. | Buckeye Salt. |
|--|---|---------------|

MUSKINGUM COUNTY.

| | | |
|--|-----------------------|--|
| Drift. Lehigh Clay. Hydraulic Press Brick. Ironsport. | Fair Oaks. Werner. | |
|--|-----------------------|--|

NOBLE COUNTY.

| | | |
|---------|--------|--|
| Marion. | Noble. | |
|---------|--------|--|

OTTAWA COUNTY.

| | | |
|--|-----------------|--|
| | Consumer No. 2. | |
|--|-----------------|--|

PERRY COUNTY.

| | | |
|--|--|--------------------------------|
| O. M. & M. C. Clay No. 2 Shaft. Simons No. 5. Keystone No. 2. | No. 53. Beach Grove. Iron, Clay & Coal. Green Valley. Santoy No. 2. Indian Run. Northwest. | S. C. No. 5. Bristol No. 1. |
|--|--|--------------------------------|

ANNUAL REPORT

SCIOTO COUNTY.

| New Mines. | Suspended. | Abandoned. |
|------------|------------|--|
| | Cook Clay. | Sugar Camp No. 1. Buckeye Clay No. 1. Clay Mill. |

STARK COUNTY.

| | | |
|--|---|--|
| Massillon Crystal. Massillon City. Elm Run No. 7. Geaute. Sonnhalter. Newman. | Pleasant Valley. Crescent. N. F. P. No. 2. C. H. B. Pike Run. Whitacre No. 4. Davis. Eli No. 2. Tunnel. | New Greenville No. 3. Haring Wilson. South Massillon. Elm Run No. 1. Elm Run No. 6. M. C. M. No. 3. |
|--|---|--|

SUMMIT COUNTY.

| | | |
|-------|--|------------------|
| Bell. | | Swinehart No. 1. |
|-------|--|------------------|

TUSCARAWAS COUNTY.

| | | |
|---|--|--------------------------------------|
| Veleney. Mullins No. 4. Schindler. Burgis No. 2. | Twin City. East Goshen No. 1. Mullins No. 3. | Royal Goshen No. 5. Baltic No. 1. |
|---|--|--------------------------------------|

VINTON COUNTY.

| | | |
|-----------------------|--|--|
| Raccoon Valley No. 3. | Clarion. Raccoon Valley No. 2. Raccoon Valley No. 1. | |
|-----------------------|--|--|

WAYNE COUNTY.

| | | |
|--------------|--------------------------------|--|
| Burton City. | Doylestown No. 1. Chippewa. | West Lebanon No. 1. Jones No. 2. Porter. |
|--------------|--------------------------------|--|

TABLE SHOWING THE NUMBER OF LARGE MINES EMPLOYING TEN OR MORE MEN, AND THE NUMBER OF SMALL MINES WITH LESS THAN TEN MEN, IN OPERATION DURING THE YEAR 1908; ALSO NUMBER OF LARGE MINES IDLE DURING THE YEAR.

| Counties. | Large Mines, Ten or More Men, in Operation. | Large Mines Idle in 1908. | Total Number of Large Mines. | Small Mines, Less Than Ten Men, in Operation. | Total Mines in Operation. |
|-----------------|---|---------------------------|------------------------------|---|---------------------------|
| Athens..... | 49 | 3 | 52 | 22 | 71 |
| Belmont..... | 48 | 3 | 51 | 36 | 84 |
| Carroll..... | 14 | ..... | 14 | 18 | 32 |
| Columbiana..... | 14 | ..... | 14 | 32 | 46 |
| Coshocton..... | 10 | ..... | 10 | 22 | 32 |
| Gallia..... | 2 | ..... | 2 | 10 | 12 |
| Guernsey..... | 29 | ..... | 29 | 23 | 52 |
| Harrison..... | 2 | 1 | 3 | 33 | 35 |
| Hocking..... | 15 | ..... | 15 | 6 | 21 |
| Holmes..... | ..... | ..... | ..... | 18 | 18 |
| Jackson..... | 38 | 7 | 45 | 30 | 68 |
| Jefferson..... | 35 | 4 | 39 | 34 | 69 |
| Lawrence..... | 8 | 1 | 9 | 35 | 43 |
| Mahoning..... | 4 | 1 | 5 | 19 | 23 |
| Medina..... | ..... | ..... | ..... | 8 | 8 |
| Meigs..... | 14 | ..... | 14 | 31 | 45 |
| Morgan..... | 2 | ..... | 2 | ..... | 2 |
| Muskingum..... | 15 | 1 | 16 | 57 | 72 |
| Noble..... | 4 | ..... | 4 | 35 | 39 |
| Perry..... | 33 | 2 | 35 | 30 | 63 |
| Portage..... | 3 | ..... | 3 | 3 | 6 |
| Scioto..... | 1 | ..... | 1 | ..... | 1 |
| Stark..... | 16 | 1 | 17 | 49 | 65 |
| Summit..... | 2 | ..... | 2 | 8 | 10 |
| Trumbull..... | ..... | ..... | ..... | 11 | 11 |
| Tuscarawas..... | 36 | ..... | 36 | 57 | 93 |
| Vinton..... | 10 | 1 | 11 | 7 | 17 |
| Washington..... | 1 | ..... | ..... | 1 | 2 |
| Wayne..... | 5 | 1 | 6 | 6 | 11 |
| Total..... | 410 | 26 | 435 | 641 | 1,051 |

TABLE SHOWING THE NUMBER OF MINES USING THE VARIOUS METHODS OF VENTILATION, AND THE THREE KINDS OF OPENINGS.

| Counties. | Drift. | Slope. | Shaft. | Total. | Fan. | Furnace. | Fire Basket. | Ex. Steam. | Natural. | Total. |
|-----------------|--------|--------|--------|--------|------|----------|--------------|------------|----------|--------|
| Athens..... | 39 | 10 | 19 | 68 | 42 | 2 | 2 | .... | 22 | 68 |
| Belmont..... | 55 | 15 | 9 | 79 | 47 | 18 | 2 | .... | 12 | 79 |
| Carroll..... | 28 | 1 | 3 | 32 | 7 | 10 | 4 | .... | 11 | 32 |
| Columbiana..... | 27 | 13 | 6 | 46 | 16 | 7 | 4 | 2 | 17 | 46 |
| Coshocton..... | 33 | .... | .... | 33 | 4 | 12 | 3 | .... | 14 | 33 |
| Gallia..... | 10 | 2 | .... | 12 | .... | 4 | 1 | .... | 7 | 12 |
| Guernsey..... | 23 | 13 | 15 | 51 | 25 | 4 | 2 | .... | 20 | 51 |
| Harrison..... | 27 | 4 | 1 | 32 | 1 | .... | .... | .... | 31 | 32 |
| Hocking..... | 20 | 2 | .... | 22 | 8 | 5 | 1 | .... | 8 | 22 |
| Holmes..... | 14 | 3 | 1 | 18 | .... | 4 | 1 | 1 | 12 | 18 |
| Jackson..... | 47 | 10 | 22 | 79 | 32 | 30 | 4 | .... | 13 | 79 |
| Jefferson..... | 53 | 8 | 8 | 69 | 35 | 11 | 2 | .... | 21 | 69 |
| Lawrence..... | 42 | 1 | .... | 43 | .... | 17 | 2 | .... | 24 | 43 |
| Mahoning..... | 4 | 14 | 5 | 23 | 7 | 2 | 3 | 1 | 10 | 23 |
| Medina..... | .... | 6 | 2 | 8 | .... | 4 | .... | 3 | 1 | 8 |
| Meigs..... | 41 | 2 | 2 | 45 | 7 | 13 | .... | .... | 25 | 45 |
| Morgan..... | 2 | .... | .... | 2 | 2 | .... | .... | .... | .... | 2 |
| Muskingum..... | 58 | 13 | 1 | 72 | 6 | 15 | 2 | .... | 49 | 72 |
| Noble..... | 34 | 3 | 2 | 39 | 3 | 2 | .... | .... | 34 | 39 |
| Perry..... | 53 | 8 | 4 | 65 | 29 | 9 | 3 | .... | 24 | 65 |
| Portage..... | .... | .... | 6 | 6 | 3 | .... | .... | 1 | 2 | 6 |
| Scioto..... | 1 | .... | .... | 1 | .... | 1 | .... | .... | .... | 1 |
| Stark..... | 35 | 14 | 17 | 66 | 10 | 23 | 4 | 4 | 25 | 66 |
| Summit..... | 1 | 5 | 4 | 10 | 1 | .... | 1 | 1 | 7 | 10 |
| Trumbull..... | 1 | 4 | 6 | 11 | .... | .... | .... | .... | 11 | 11 |
| Tuscarawas..... | 75 | 15 | 3 | 93 | 16 | 40 | 3 | .... | 34 | 93 |
| Vinton..... | 15 | 1 | 1 | 17 | 9 | 2 | 1 | .... | 5 | 17 |
| Washington..... | .... | 1 | .... | 1 | .... | 1 | .... | .... | .... | 1 |
| Wayne..... | 4 | 3 | 3 | 10 | 4 | .... | 1 | 1 | 4 | 10 |
| Total..... | 742 | 171 | 140 | 1,053 | 314 | 236 | 46 | 14 | 443 | 1,053 |

TABLE SHOWING THE NUMBER OF MINES EMPLOYING THE VARIOUS METHODS OF VENTILATION, AND THE THREE KINDS OF OPENINGS FROM 1892 TO 1908 INCLUSIVE.

| Year. | 1892 | 1893 | 1894 | 1895 | 1896 | 1897 | 1898 | 1899 | 1900 | 1901 | 1902 | 1903 | 1904 | 1905 | 1906 | 1907 | 1908 |
|---|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|
| Drifts..... | 303 | 676 | 657 | 749 | 821 | 800 | 921 | 789 | 696 | 625 | 589 | 591 | 638 | 626 | 696 | 691 | 742 |
| Shafts..... | 91 | 121 | 149 | 150 | 149 | 153 | 143 | 145 | 122 | 133 | 140 | 142 | 153 | 130 | 163 | 140 | 140 |
| Slopes..... | 40 | 61 | 61 | 68 | 66 | 85 | 145 | 133 | 140 | 149 | 142 | 140 | 142 | 125 | 144 | 149 | 171 |
| Small mines, kind of opening unknown..... | 458 | 151 | 296 | 220 | 167 | 190 | 46 | 65 | 114 | 99 | 96 | 81 | 85 | ..... | ..... | ..... | ..... |
| Total..... | 892 | 1,009 | 1,163 | 1,187 | 1,203 | 1,228 | 1,255 | 1,132 | 1,072 | 1,006 | 967 | 954 | 1,018 | 881 | 1,003 | 980 | 1,053 |
| Fans..... | 127 | 141 | 139 | 134 | 134 | 149 | 149 | 147 | 171 | 182 | 219 | 259 | 282 | 289 | 299 | 322 | 314 |
| Furnaces..... | 253 | 323 | 264 | 278 | 281 | 280 | 317 | 274 | 264 | 253 | 222 | 244 | 254 | 239 | 252 | 235 | 236 |
| Fire baskets..... | 11 | 23 | 32 | 36 | 38 | 51 | 45 | 41 | 48 | 40 | 57 | 44 | 50 | 36 | 38 | 37 | 46 |
| Steam jets and ex. from pumps..... | 30 | 39 | 43 | 48 | 52 | 49 | 47 | 34 | 33 | 44 | 45 | 32 | 34 | 13 | 13 | 19 | 14 |
| Natural..... | 206 | 316 | 378 | 452 | 528 | 516 | 636 | 523 | 453 | 389 | 336 | 302 | 320 | 304 | 401 | 307 | 443 |
| Small mines, mode of ventilation unknown..... | 266 | 167 | 309 | 242 | 179 | 200 | 73 | 107 | 103 | 98 | 88 | 73 | 78 | ..... | ..... | ..... | ..... |
| Total..... | 892 | 1,009 | 1,163 | 1,190 | 1,212 | 1,245 | 1,267 | 1,126 | 1,072 | 1,006 | 967 | 954 | 1,018 | 881 | 1,003 | 980 | 1,053 |

Note.—This Department will henceforth classify all mines with more than one opening, and where all coal is dumped over one tippie, as one mine only.

MINES GENERATING FIRE DAMP.

The number of mines generating fire damp reported to this department by the district mine inspectors, was one hundred and ten (110), fourteen more than reported for the year 1907.

As mining operations are on the increase, and mining properties extended and vast territories being worked out, the number of mines generating this deadly element is on the increase, and it behooves every member of this department to be ever on the alert, keeping in close touch with these mines, especially where they generate fire damp to a dangerous degree, to see that all the rules and orders issued by this department, and the mining laws in particular, are carried out in full. Too much care and precaution cannot be taken in combatting this deadly enemy of those employed in the mines, and mine bosses and superintendents, mine employes and all engaged in the operation of a mine should assume their share of responsibility in guarding against it.

The most serious accident reported for the year was caused by gas being generated in a mine that had been suspended for some time, and which was entered without being examined by the fire boss, with open lights, causing the death of two persons and the accidental death of a third who went to the rescue. (See page 124.)* Ohio has indeed been very fortunate in this respect, and gas and dust explosions have been very few in number and not of the magnitude experienced in other states, where hundreds of lives have been lost due to these causes.

The order requiring dust to be taken out of the mines has undoubtedly added to the safety of many of our mining operations; on the other hand, numerous bulletins and orders have been issued to mine bosses and superintendents warning them of these dangerous elements, and giving instructions as to the best methods of dealing with them.

So great has become the death rate from these great catastrophes supposedly due to the presence of fire damp, dust and the careless handling of explosives in the mines, that our government has become awakened to the keen sense of its responsibility in this direction and has established a testing station at Pittsburg, Pa., for the purpose of making scientific and practical tests and determining the causes of these terrible explosions which have visited our mines in recent years. Our government also invited to this country well known experts of foreign countries to come and inspect our mines, and make a report as to the cause of these accidents.

*A complete account of this accident will be found in Inspector Morrison's report.

Observations were made by this party of foreign experts, accompanied by members from the United States Geological Survey and Testing Station, and their report was later submitted to this government, a copy of which will be found on page 52 of this report.

Once the nation becomes alive to the situation countless good will result from these investigations and experiments, and the movement will probably terminate in there being established at our national capitol a bureau of mines, which will be devoted exclusively to the mineral resources in which this country so richly abounds, and which from some cause or other have been neglected and considered of minor consequence.

DETAILED LIST OF MINES WHICH GENERATE LIGHT CARBURETED HYDROGEN GAS.

ATHENS COUNTY.

| | | |
|----------------|----------------|-------------------------|
| S. C. No. 267. | S. C. No. 255. | S. C. No. 212. |
| S. C. No. 266. | S. C. No. 281. | Northern Fuel No. 24. |
| S. C. No. 256. | S. C. No. 275. | New Pittsburg No. 9. |
| S. C. No. 311. | S. C. No. 201. | New Pittsburg No. 10. |
| S. C. No. 312. | S. C. No. 209. | Eclipse No. 3. |
| S. C. No. 254. | S. C. No. 210. | Canaanville No. 3. |
| S. C. No. 10. | S. C. No. 211. | Luhrig Nos. 1, 2 and 3. |
| S. C. No. 252. | | Hisylvania No. 23. |

BELMONT COUNTY.

| | | |
|---------------|------------------|----------------|
| Johnsons. | Eleanor | Glen. |
| Eastern Ohio. | Dellora. | Black Oak. |
| Clifford. | Neff No. 1. | Victor. |
| Captina. | Black Diamond. | Virginia Hill. |
| Wegee. | Wheeling Valley. | Provident. |

COLUMBIANA COUNTY.

| | | |
|-----------------|-------------|------------|
| Garside. | Big Walnut. | Nieheisel. |
| McNab. | | New Slope. |
| West Pittsburg. | | Salem. |

GUERNSEY COUNTY.

| | | |
|-------------------|--------------------|--------------|
| Detroit. | Imperial. | West Branch. |
| Blue Bell. | Little Kate No. 1. | Valley. |
| Hartford. | Little Kate No. 2. | Forsythe. |
| Cleveland No. 1. | Buckeye. | Old Orchard. |
| Trail Run No. 1. | Ideal. | Eureka. |
| Trail Run No. 2. | Midway. | Ohio No. 1. |
| Little Trail Run. | Walhonding No. 2. | Ohio No. 2. |
| Puritan. | Black Top. | Klondyke. |
| White Ash. | Kingston. | Murray Hill. |
| | Diamond. | Derwent. |

HOCKING COUNTY.

New Pittsburg No. 7.

JACKSON COUNTY.

| | | |
|------------------|-----------|--------------|
| Superior No. 9. | Domestic. | Globe No. 4. |
| Superior No. 12. | | Alma No. 2. |
| Superior No. 3. | | |

JEFFERSON COUNTY.

| | | |
|-------------|-----------------|------------|
| La Belle. | West Pittsburg. | Elizabeth. |
| La Grange. | | Zerbe. |
| High Shaft. | | Amsterdam. |

MAHONING COUNTY.

Lowellville.

NOBLE COUNTY.

| | | |
|--------|--------|-------------|
| Noble. | Laura. | Golden Rod. |
|--------|--------|-------------|

DETAILED LIST OF MINES WHICH GENERATE LIGHT
CARBURETED HYDROGEN GAS—Concluded.

PERRY COUNTY.

San Toy Nos. 1 and 2.

Lost Run No. 4.

PORTAGE COUNTY.

Hutson No. 4.

Hutson No. 8.

STARK COUNTY.

Pocock No. 3.

No. 17.

No. 19.

Fox No. 12.

No. 18.

No. 20.

Geise No. 13.

Warwick No. 5.

Willow Grove.

Stanwood No. 8.

TUSCARAWAS COUNTY.

Beaver Dam No. 1.

Beaver Dam No. 2.

Goshen Shaft.

ACCIDENTS

INVESTIGATION INTO THE CAUSE OF THE EXPLOSION OF GAS AT THE GARSIDE MINE, COLUMBIANA COUNTY, MAY 27TH, AND ORDERS ISSUED IN REGARD TO PRECAUTIONS FOR SAFETY OF THE MINE, PREVIOUS TO THE RESUMPTION OF WORK.

Columbus, Ohio, June 8th, 1908.

Big Vein Coal Co., Cleveland, O.

Dear Sirs:—In company with Inspectors Messrs. Morrison, Miller and Smith, we visited your Garside mine at Salineville on 4th inst., with a view of investigating the cause of explosion resulting in the death of three men on the 27th of last month. On account of the displacement of timbers in the shaft, and general wreck from the force of the explosion, we were unable to reach the bottom of the shaft with the hoisting cages, and owing to the incompleteness of the partitions between the hoisting shaft and the air chamber, and entire absence of any air current beyond the shaft bottom, it was unsafe to attempt any investigation of the cause of explosion, or inspection of the mine beyond that point.

From the information given to us by the management, by the hoisting engineers, and also by the men who were employed as fire bosses previous to the mine being stopped last January, there seems to have been a most flagrant disregard for the requirements of law and orders of this department, insofar as the proper ventilation of the mine and necessary precautions against fire-damp explosions were concerned.

First of all, the ventilating fan, which was originally erected on the surface on top of the air chamber, failed to produce the necessary volume of air because of the defects of, or non-completion of the wooden partition between the hoisting shaft and the air chamber. To avoid a few dollars expense necessary to complete the partition and make an air tight air chamber, which ought to have been done at first, the fan (without the knowledge, consent or approval of the mine inspector) was removed from the surface into the inside of the mine; an act which seriously reflects on the management of any mine, especially so where a mine is fully known to generate as great a quantity of gas as this one was known to do.

After the commencement of the strike last January, the services of fire-bosses seem to have been entirely dispensed with, and whenever it was necessary to enter the mine, the mine boss and those accompanying him to do any kind of work, would be permitted to enter without even the ventilating fan being in operation, much less the mine being examined by a competent person with a safety lamp, and reported on as required by law, and orders of the department before any person was allowed to enter it.

It is very unpleasant for us to have to refer to the records in this office, which are conclusive evidence that since the opening of this mine it has had more attention from this department, and has been a greater source of expense, annoyance and anxiety on account of the seeming desire on part of some one to evade the law, and ignore the necessary and legitimate orders of the inspector, than any other mine in the state.

In view of the recent sacrifice of human life, we are compelled to order that before any person is allowed to go into the mine further than the bottom

of the shaft, the partition between the main hoisting shaft and the air chamber must be completed and made a thoroughly independent air tight airway, and that the hoisting shaft must be properly lined with air tight material; adequate ventilating power must be provided, and a sufficient volume of air carefully conducted into the interior of the mine by substantial brick or cement air stoppings, and just as soon as the air chamber and work in the shaft has been completed, and a volume of air provided sufficient to safely perform the work of clearing the wreckage around the bottom of the shaft, we require that this department be notified so an inspection can be made, and if possible learn the cause of, and point where the explosion took place.

Trusting you will see that these instructions are carried out to the letter, we remain,

Yours truly,

GEO. HARRISON,

Chief Inspector of Mines.

ALEX. SMITH,

Inspector Sixth District.

W. H. MILLER,

Inspector Seventh District.

THOS. MORRISON,

Inspector Ninth District.

Columbus, Ohio, June 24, 1908.

Big Vein Coal Co., Cleveland, Ohio.

Dear Sirs.—We herewith enclose you copy of the report of Mr. Morrison and Mr. Smith, district inspectors, who have made an investigation following the mine explosion at your Garside mine. You will also notice that they have made certain requests and have given certain orders which this department very fully indorses. It certainly needs no comments to convince you that the most rigid enforcement of the law is absolutely necessary where the conditions are such as they found at your mine. It will no doubt take some time to place the mine in working condition, and in addition to the orders given we request that the stoppings in the main airways or in the pillar between the main airways be made of hard material, such as brick, tile or cement. We also highly approve of the request made for a large, slow-speed fan to be erected on the surface, the building including the fan to be so constructed as to permit of the reversing of the current at any moment by the opening and closing of certain doors constructed for that purpose.

Very truly yours,

GEO. HARRISON,

Chief Inspector of Mines.

Amsterdam, Ohio, June 24, 1908.

Mr. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio.

Dear Sir:—Herein is contained a report of our investigation of the Garside mine. We went to the shaft Monday afternoon, and first examined the shaft, which we found lined about as complete as possible. We then went in the east side of the mine. The wreckage had been cleared from the bottom.

At the first north entry, we found a car which had evidently been blown out of this entry onto the main, and was turned clear over and badly smashed. The indications at this point show that the force had traveled both ways, as the door had been first blown inward, stripped off its hinges, and then blown outward, leaving one of the hinges jammed between the top and bottom and bent outward in the middle. The other hinge was left laying on the bottom, and the door post blown towards the shaft.

We then went in the main east. There we found that the force of the explosion had been outward. Cars were piled up in all kinds of shape, irons bent

TABLE SHOWING THE NUMBER OF FATAL, SERIOUS AND MINOR ACCIDENTS, AND THE NUMBER OF EACH CLASSIFICATION THAT OCCURRED IN EACH COUNTY FROM JANUARY 1, 1908, TO DECEMBER 31, 1908, INCLUSIVE.

| Counties. | Fatal. | Serious. | Minor. | Total. |
|-----------------|--------|----------|--------|--------|
| Athens..... | 3 | 61 | 18 | 82 |
| Belmont..... | 42 | 89 | 18 | 149 |
| Carroll..... | 3 | 1 | 2 | 6 |
| Columbiana..... | 7 | 11 | 2 | 20 |
| Coshocton..... | 1 | 8 | 3 | 12 |
| Gallia..... | | | | |
| Guernsey..... | 16 | 48 | 19 | 83 |
| Harrison..... | 3 | 8 | 3 | 14 |
| Hocking..... | 3 | 5 | 2 | 10 |
| Holmes..... | | | | |
| Jackson..... | | 15 | 4 | 19 |
| Jefferson..... | 14 | 65 | 24 | 103 |
| Lawrence..... | | 3 | 2 | 5 |
| Mahoning..... | | | 1 | 1 |
| Medina..... | | | | |
| Meigs..... | 5 | 4 | 1 | 10 |
| Morgan..... | 1 | 9 | 6 | 16 |
| Muskingum..... | | 7 | 2 | 9 |
| Noble..... | | 6 | 5 | 11 |
| Ottawa..... | | 3 | 8 | 11 |
| Perry..... | 4 | 27 | 16 | 47 |
| Portage..... | | 4 | 2 | 6 |
| Scioto..... | 2 | 1 | | 3 |
| Stark..... | 2 | 18 | 10 | 30 |
| Summit..... | | 5 | | 5 |
| Tuscarawas..... | 6 | 22 | 21 | 49 |
| Vinton..... | | 3 | 1 | 4 |
| Wayne..... | | 3 | | 3 |
| Totals | 112 | 426 | 170 | 708 |

and endgates blown outward, and in most cases the cars were covered with falls of roof.

Next, the north face entry was entered, and there it was evident that the force of the explosion was most severe. At the end of the passway we found a trip of cars which had been standing on the passway. They had started towards the shaft by the force of the explosion, but the first car turned across the entry at the latches, and the rest piled on top of it, almost completely blocking the entry. The last cars were very badly damaged, being stripped entirely of the woodwork and leaving nothing but the wheels and a mass of twisted iron. Beyond this point we found considerable gas, and were unable to penetrate this entry very far beyond the end of the passway.

We next entered the east entries of this face, but could not get very far, as we again found the gas within a very few inches of the bottom before we had gone a hundred feet, and what distance we did go we had to crawl over falls and broken cars. As we were unable to penetrate further into this side of the mine, we next went towards the south shaft. We had to climb over falls nearly all the way, but otherwise very little damage was done in this direction. We may here state that not a stopping or door was left in the east side of the mine.

We next penetrated the west side, and with the exception of a door being blown to pieces near the shaft bottom, and two doors at the neck of the north and south entries, and one stopping being blown between the south entries, practically no damage was done to this side of the mine. The indications were that the entire explosion occurred on the east side and traveled in the west side, as well as up the shaft, as the doors on this side were blown inward. In fact, the door on the main west, which was hung to open outward, was blown in through the frame and was almost intact, indicating that the force was almost spent when it reached this point.

At the face of the south entry, we found the gas back to the breakthrough and down within eighteen (18) inches of the bottom. A car was standing at this point, covered with slate. We didn't attempt to go to the face.

In the main west we found very little gas, and not very many falls. We were unable to penetrate the north entry very far on account of water, but as far as we went we found that there was no indication of any force, and the stoppings were all standing in good condition.

The following orders were given, and we desire that a copy be sent to the company and one to Mr. Marshall. In fact, Mr. Marshall wants these orders in writing:

First—We insist that safety lamps be used exclusively until all stoppings are built, the circulation of air made complete, and all standing gas removed from the mine. Stoppings to be built to comply with the law.

Second—That the fan be kept running continually, and the roof made safe by timbering or otherwise as the work of cleaning up the mine proceeds.

Third—Believing as we do, that the present fan in operation at this mine will be inadequate to furnish the necessary amount of ventilation to properly ventilate, dilute and render harmless all gases generated in this mine, we feel that it is our duty at this time, in order to avoid any further delay when the mine is ready to resume operations, to advise and suggest that a large, slow-speed propeller fan be erected at the top of the shaft.

Fourth—That this department be notified before they resume operations, so that an inspection can be made and conditions approved or disapproved.

Respectfully yours,

[Signed.]

THOMAS MORRISON,
Inspector Ninth District.
ALEX. SMITH,
Inspector Sixth District.

TABLE SHOWING THE NUMBER OF FATAL, SERIOUS AND MINOR ACCIDENTS, AND THE NUMBER OF EACH CLASSIFICATION THAT OCCURRED IN EACH COUNTY FROM JANUARY 1, 1908, TO DECEMBER 31, 1908, INCLUSIVE.

| Counties. | Fatal. | Serious. | Minor. | Total. |
|-----------------|--------|----------|--------|--------|
| Athens..... | 3 | 61 | 18 | 82 |
| Belmont..... | 42 | 89 | 18 | 149 |
| Carroll..... | 3 | 1 | 2 | 6 |
| Columbiana..... | 7 | 11 | 2 | 20 |
| Coshocton..... | 1 | 8 | 3 | 12 |
| Gallia..... | | | | |
| Guernsey..... | 16 | 48 | 19 | 83 |
| Harrison..... | 3 | 8 | 3 | 14 |
| Hocking..... | 3 | 5 | 2 | 10 |
| Holmes..... | | | | |
| Jackson..... | | 15 | 4 | 19 |
| Jefferson..... | 14 | 65 | 24 | 103 |
| Lawrence..... | | 3 | 2 | 5 |
| Mahoning..... | | | 1 | 1 |
| Medina..... | | | | |
| Meigs..... | 5 | 4 | 1 | 10 |
| Morgan..... | 1 | 9 | 6 | 16 |
| Muskingum..... | | 7 | 2 | 9 |
| Noble..... | | 6 | 5 | 11 |
| Ottawa..... | | 3 | 8 | 11 |
| Perry..... | 4 | 27 | 16 | 47 |
| Portage..... | | 4 | 2 | 6 |
| Scioto..... | 2 | 1 | | 3 |
| Stark..... | 2 | 18 | 10 | 30 |
| Summit..... | | 5 | | 5 |
| Tuscarawas..... | 6 | 22 | 21 | 49 |
| Vinton..... | | 3 | 1 | 4 |
| Wayne..... | | 3 | | 3 |
| Totals | 112 | 426 | 170 | 708 |

TABLE SHOWING LIST OF FATAL ACCIDENTS OCCURRING IN THE MINES OF THE STATE OF OHIO DURING THE YEAR 1908.

| Counties. | Falls of Roof. | Falls of Coal. | Mine Cars. | Mining Machines. | Motors. | Shocks from Electricity. | Explosions of Fire Damp. | Premature Explosions and Explosions of Powder. | Shot Through Rib. | Falling Timber. | Descending Cage. | Falls from Tiptle. | Miscellaneous. | Total. | Americans. | Foreigners. | Per Cent. of Americans. | Per Cent. of Foreigners. |
|------------|----------------|----------------|------------|------------------|---------|--------------------------|--------------------------|--|-------------------|-----------------|------------------|--------------------|----------------|--------|------------|-------------|-------------------------|--------------------------|
| Athens | 1 | 1 | | | | | | | | | | | 1 | 2 | 2 | 1 | | |
| Belmont | 25 | | 11 | | 1 | 4 | | | | | | | 1 | 42 | 38 | 4 | 16.7 | 83.3 |
| Carroll | 3 | | | | | | | | | | | | | 3 | 3 | | | |
| Columbiana | 3 | | | | | | 1 | 1 | | 1 | | | | 7 | 7 | | | |
| Coshocton | 1 | | | | | | | | | | | | | 1 | 1 | | | |
| Guernsey | 9 | | 2 | | | 1 | | | | | 1 | 1 | 1 | 16 | 13 | 3 | 81.3 | 18.8 |
| Harrison | 2 | | | | 1 | | | | | | | | | 3 | 3 | | | |
| Hocking | 1 | | | | | | | | | | | | 1 | 2 | 2 | | | |
| Jefferson | 11 | | 1 | 7 | | | | | | | | | 1 | 14 | 11 | 3 | 7.1 | 92.9 |
| Meigs | 5 | | | | | | | | | | | | | 5 | 5 | | | |
| Morgan | | | | | 1 | | | | | | | | | 1 | 1 | | | |
| Perry | 3 | | | | | | | | | | | | 1 | 4 | 4 | 1 | | |
| Seloto | | | | | | | | | | | | | | 2 | 2 | | | |
| Stark | 12 | | | | | | | | | | | | | 12 | 12 | | | |
| Tuscarawas | 4 | 1 | | | | | | | 1 | | | | | 6 | 5 | 1 | | |
| Totals | 70 | 2 | 16 | 1 | 3 | 5 | 2 | 3 | 1 | 1 | 1 | 2 | 6 | 112 | 53 | 59 | *48.2 | *51.8 |

*Average per cent. of Americans and foreigners killed in the state during the year 1908.

TABLE SHOWING PERCENTAGE OF EACH CAUSE TO WHICH ACCIDENTS ARE ATTRIBUTABLE.

| | 1907. | 1908. |
|------------------------------|--------|--------|
| Falls Roof..... | 60.7 | 61.8 |
| Falls Coal..... | 1.8 | 1.9 |
| Mine Cars..... | 10.4 | 14.8 |
| Motors | 2.7 | 2.8 |
| Mining Machines..... | 4.5 | 2.9 |
| Fire Damp..... | 1.8 | 1.8 |
| Premature Explosion..... | 1.3 | 3.7 |
| Shocks from Electricity..... | 2.7 | 4.7 |
| Railroad Cars..... | 5.4 | ..... |
| Boiler Explosion..... | 2.7 | ..... |
| Descending Cage..... | ..... | .9 |
| Falling Timber..... | ..... | .9 |
| Falls from Tiptle..... | ..... | 1.8 |
| Shot through Rib..... | 1.3 | .9 |
| Miscellaneous | 7.2 | 3.1 |
| | 100.00 | 100.00 |

ACCIDENTS AND THEIR CAUSES.

By way of information to those connected with the management and working of mines, we have had prepared a synopsis (see page 136) of the details of every fatal accident reported to the department for the year. This should be the means of accomplishing much good if given the right consideration, and accidents avoided by guarding against causes which contributed to these fatalities.

While there was a very large decrease in the total tonnage for the year, the number of persons employed in the mines increased over 2,000 persons, and the number of fatal accidents decreased from 153 in 1907 to 112 in the year 1908, or 26.7%. The number of tons of coal mined to the life lost was 234,713 tons, as compared with 211,542 during the preceding year.

Falls of roof claimed the greatest number of fatal accidents, 70 in all, or 61.8% ; mine cars, 16, or 14.8% ; the use of electricity, 5, or 4.7%, and explosions of powder, 3, or 3.7%.

Considering the scarcity of work and the fact that many of the mines were idle a great portion of the time, when accidents are more liable to occur, the showing for the year was much better than it has been wont to be. This department still maintains that many of the fatal accidents which we are called upon to investigate and report upon could have been avoided, and many cases show the presence of lack of discipline and correct workmanship surrounding the manner and circumstances in connection with them.

As often stated in former reports, the duties of all persons connected with the mining of coal should be more sharply defined by law ; when this is accomplished this department will have some basis on which to prosecute all offenders who do not have the respect for the law necessary to the proper operation of a mine without the loss of life now reported from many of the mines in our state.

The serious accidents by falls of roof were 178 ; mine cars 135 ; falls of roof showed a decided decrease, 191 being reported in the year 1907, but those caused by mine cars remained identically the same—135. This was also the case in the number resulting fatally, 16. Accidents from this cause are seemingly increasing, since the number employed was greater and the tonnage much less, notwithstanding that this department has issued printed rules and orders against the riding on front end of trips and jumping on them when running at high speed.

Not since the year 1903 have the accidents attained such a low number, and if under the trying circumstances and conditions under which

men worked during the year just closed this result can be obtained, under more normal conditions, with the mines in full operation, the number ought to be very materially reduced.

The most serious accident of the year occurred at the Garside mine in Columbiana County, a full account of which will be found on pages 124 and 125 of this report.

Of the total number of fatal accidents for the year, 48.2% were Americans, and 51.8% were foreigners. In Belmont County, where 42 fatalities occurred, 16.7% were Americans and 83.3% were foreigners. In Guernsey County, out of 16 killed, 81.2% were Americans and 18.8% foreigners. In Jefferson County, where 14 were killed, 7.1% were Americans and 92.9% foreigners. These comparisons certainly give room for grave thought and consideration, and more attention should be given this class of foreign labor which is being pressed into the mines of our state. If the proper safeguards had been thrown around these men, or if they had been disciplined to perform their work in a manner best adapted to their self-protection, countless numbers of those meeting death would never have been recorded.

Belmont County reported 25 persons killed by falls of roof, and 11 by mine cars, showing a decrease of 5 in the number killed by falls of roof and an increase of 7 by mine cars. Jefferson County showed a decided decrease in the number of fatal accidents, 14 being reported for the year, as compared with 27 reported for the year 1907, or a decrease of 13. There was an entire elimination of fatalities caused by the use of electricity in this county, while in 1907, four were killed in this manner.

The total number of accidents was 708, of which 112 were fatal, 426 serious, and 170 of minor consequence.

TABLE SHOWING THE NUMBER AND CHARACTER OF ACCIDENTS WHICH RESULTED FROM THE PRINCIPAL SOURCES AS REPORTED FROM EACH COUNTY FROM JANUARY 1, 1908, TO DECEMBER 31, 1908, INCLUSIVE.

| COUNTIES | Falls of Roof | | Falls of Coal | | Mine Cars | | Motors and Mining Machines | | Premature Exp. and Exp. Powder | | Explosions of Gas | | Shocks from Electricity | | Miscellaneous | | Total | | Grand Total | | |
|-----------------|---------------|-----|---------------|-----|-----------|-----|----------------------------|-----|--------------------------------|-----|-------------------|-----|-------------------------|-----|---------------|-----|-------|-----|-------------|----|-----|
| | F. | S. | M. | F. | S. | M. | F. | S. | M. | F. | S. | M. | F. | S. | M. | F. | S. | M. | | | |
| Athens..... | 1 | 26 | 4 | 1 | 7 | 1 | 13 | 5 | 3 | 1 | 1 | 1 | 1 | ... | 1 | 11 | 5 | 3 | 61 | 18 | 82 |
| Belmont..... | 25 | 43 | 9 | ... | 5 | ... | 30 | 3 | 1 | 2 | 2 | 2 | ... | ... | 1 | 2 | 1 | 42 | 89 | 18 | 149 |
| Carroll..... | 3 | 5 | ... | ... | 1 | ... | 1 | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 3 | 1 | 2 | 6 |
| Columbiana..... | 1 | 4 | 1 | ... | 1 | ... | 3 | 2 | ... | 2 | 1 | 1 | ... | ... | ... | ... | ... | 7 | 11 | 3 | 20 |
| Coshocton..... | 9 | 16 | 5 | ... | 1 | ... | 2 | 8 | 4 | 2 | 1 | 1 | ... | ... | ... | ... | ... | 1 | 8 | 3 | 12 |
| Guernsey..... | 2 | 5 | 2 | ... | 1 | ... | 20 | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 3 | 16 | 48 | 83 |
| Harrison..... | 1 | 2 | 1 | ... | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 3 | 8 | 3 |
| Hocking..... | 6 | 3 | ... | ... | ... | ... | 2 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 3 | 5 | 14 |
| Jackson..... | 11 | 25 | 7 | ... | 2 | ... | 1 | 26 | 9 | 2 | 2 | 1 | 2 | ... | ... | ... | ... | ... | 15 | 4 | 19 |
| Jefferson..... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 10 |
| Lawrence..... | 1 | 2 | ... | ... | 1 | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 14 | 103 |
| Mahoning..... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 | 5 |
| Meigs..... | 5 | 2 | 1 | ... | ... | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 |
| Morgan..... | ... | 4 | 1 | ... | ... | ... | 4 | 5 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 5 | 4 | 1 | 10 |
| Muskingum..... | ... | 3 | ... | ... | 2 | ... | 2 | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 9 | 6 | 16 |
| Noble..... | ... | 2 | 1 | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 7 | 2 | 9 |
| Perry..... | 3 | 13 | 6 | ... | 2 | ... | 9 | 5 | 1 | 2 | 1 | 1 | ... | ... | ... | ... | ... | ... | 6 | 5 | 11 |
| Ottawa..... | ... | 2 | 4 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 4 | 27 | 16 |
| Portage..... | ... | 1 | 1 | ... | ... | ... | 2 | 4 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 | 8 | 11 |
| Scioto..... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 4 | 2 |
| Stark..... | 2 | 8 | 4 | ... | 1 | ... | 4 | ... | 1 | 2 | 1 | 2 | ... | ... | ... | ... | ... | 2 | 18 | 10 | 30 |
| Summit..... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 5 | 5 | 5 |
| Tuscarawas..... | 4 | 6 | 7 | 1 | 3 | 2 | 7 | 10 | ... | 4 | 4 | 1 | ... | ... | ... | ... | ... | ... | 6 | 22 | 21 |
| Vinton..... | ... | 2 | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 2 | 4 |
| Wayne..... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 | 1 |
| Total..... | 70 | 178 | 59 | 2 | 29 | 7 | 16 | 135 | 55 | 4 | 25 | 12 | 3 | 19 | 5 | 2 | 3 | 6 | 5 | 1 | 708 |

TABLE SHOWING THE NUMBER AND CHARACTER OF THE ACCIDENT WHICH OCCURRED FROM JANUARY 1, 1908, TO DECEMBER 31, 190 INCLUSIVE, AND TO WHAT SOURCES THEY WERE ATTRIBUTABLE AND PERCENTAGE OF EACH.

| Various Causes of Accidents. | Fatal. | Serious. | Minor. | Total. | Percentage |
|------------------------------|--------|----------|--------|--------|------------|
| Falls of Roof..... | 70 | 178 | 59 | 307 | 40.1 |
| Falls of Coal..... | 2 | 29 | 7 | 38 | 4.4 |
| Mine Cars..... | 16 | 135 | 55 | 206 | 29.1 |
| Mining Machines..... | 1 | 23 | 12 | 36 | 5.1 |
| Motors..... | 3 | 2 | ..... | 5 | 1.3 |
| * Killed by Electricity..... | 5 | 1 | ..... | 6 | .7 |
| Premature Explosions..... | 3 | 19 | 5 | 27 | 3.8 |
| Explosions of Gas..... | 2 | 3 | 6 | 11 | 2.0 |
| Shot Through Rib..... | 1 | ..... | ..... | 1 | .3 |
| Falls Timber..... | 1 | ..... | 4 | 5 | 1.3 |
| Falling from Tipple..... | 2 | ..... | ..... | 2 | .6 |
| Falling Down Shaft..... | ..... | 2 | 1 | 3 | 2.0 |
| Decending Cage..... | 1 | ..... | ..... | 1 | .3 |
| Mules and Horses..... | ..... | 3 | 2 | 5 | 1.3 |
| Miscellaneous..... | 5 | 31 | 19 | 55 | 7.7 |
| Total..... | 112 | 426 | 170 | 708 | 100.00 |

* Killed by Electric Wires.....4
Electrocuted by coming in contact with mining machine. 1

TABLE SHOWING PER CENT. OF INCREASE OF TONNAGE, PER CENT. OF INCREASE AND DECREASE IN NUMBER OF FATAL AND SERIOUS ACCIDENTS, AND NUMBER OF TONS MINED, FOR EACH FATAL AND SERIOUS ACCIDENT FOR THE YEARS 1904, 1905, 1906, 1907 AND 1908 AS COMPARED WITH 1903.

| Years. | Number Tons Coal Produced for Each Year. | Per Cent. of Increase in Tonnage in 1904, 1905, 1906, 1907 and 1908, as Compared with the Year 1903. | Number of Fatal Accidents for Each Year. | Decrease in the Number of Fatal Accidents in 1904, 1905, 1906, 1907 and 1908, as Compared with 1903. | Increase in the Number of Fatal Accidents in 1904, 1905, 1906, 1907 and 1908, as Compared with the Year 1903. | Per Cent. of Decrease of Fatal Accidents in 1904, 1905, 1906, 1907 and 1908, as Compared with the Year 1903. | Per Cent. of Increase of Fatal Accidents in 1904, 1905, 1906, 1907 and 1908, as Compared with 1903. | Number Tons of Coal Mined for Each Fatal Accident. | Number of Serious Accidents for Each Year. | Per Cent. of Increase of Serious Accidents in 1904, 1905, 1906, 1907 and 1908, as Compared with 1903. | Number of Tons Mined for Each Serious Accident. | Decrease in the Number of Tons Mined for Each Serious Accident. | Tons Mined for Each Serious Accident in 1904, 1905, 1906, 1907 and 1908, as Compared with 1903. |
|--------|--|--|--|--|---|--|---|--|--|---|---|---|---|
| 1903. | 24,573,266 | ..... | 124 | ..... | ..... | ..... | ..... | 198,170 | 309 | ..... | 79,325 | ..... | ..... |
| 1904. | 24,583,815 | .04% | 118 | 6 | ..... | 4.8% | ..... | 208,337 | 316 | 2.2% | 77,797 | 1,728 | ..... |
| 1905. | 25,834,657 | 5% | 114 | 10 | ..... | 8% | ..... | 226,620 | 372 | 20% | 69,448 | 10,077 | ..... |
| 1906. | 27,213,495 | 11% | 127 | ..... | ..... | 2% | ..... | 214,279 | 384 | 24% | 70,868 | 8,657 | ..... |
| 1907. | 32,365,949 | 32% | 153 | ..... | 29 | ..... | ..... | 212,196 | 493 | 59% | 65,854 | 13,671 | ..... |
| 1908. | 26,287,800 | 7% | 112 | 12 | ..... | 9% | ..... | 234,713 | 426 | 37.9% | 61,708 | 17,817 | ..... |

TABLE SHOWING THE NUMBER OF FATAL AND SERIOUS ACCIDENTS, NUMBER TONS OF COAL PRODUCED, NUMBER OF EMPLOYEES, MINING MACHINES, AND MOTORS IN THE YEARS 1904, 1905, 1906, 1907 AND 1908, AS COMPARED WITH THE YEAR 1903.

| Years. | Number of Employees. | Per Cent. of Increase of Employees in 1904, 1905, 1906, 1907 and 1908, as Compared with 1903. | Number of Employes for Each Fatal Accident. | No. Fatal Accidents. | Per Cent. of Increase in the Number of Fatal Accidents in 1904, 1905, 1906, 1907 and 1908, as Compared with 1903. | Per Cent. of Decrease in Number of Fatal Accidents in 1904, 1905, 1906, 1907 and 1908, as Compared with 1903. | No. of Employes for Each Serious Accident. | Per Cent. of Increase for Each Serious Accident for the No. Employed in 1904, 1905, 1906, 1907 and 1908, as Compared with 1903. | Per Cent. of Decrease for Each Serious Accident for the No. Employed in 1904, 1905, 1906, 1907 and 1908, as Compared with 1903. | No. Mining Machines in Operation. | Increase in No. Mining Machines in 1904, 1905, 1906, 1907 and 1908, as Compared with 1903. | No. of Mine Motors in Operation. | Increase in No. of Motors in 1904, 1905, 1906, 1907 and 1908, as Compared with 1903. |
|--------|----------------------|---|---|----------------------|---|---|--|---|---|-----------------------------------|--|----------------------------------|--|
| 1903. | 41,396 | ... | 334 | 124 | ... | ... | 134 | ... | ... | 774 | ... | 143 | ... |
| 1904. | 45,834 | 10% | 388 | 118 | ... | 4.8% | 145 | 8% | 11% | 975 | 210 | 186 | 43 |
| 1905. | 44,193 | 6% | 388 | 114 | ... | 8% | 119 | ... | 11% | 1,146 | 372 | 214 | 71 |
| 1906. | 46,501 | 12% | 366 | 127 | 2% | ... | 121 | ... | 10% | 1,266 | 492 | 275 | 132 |
| 1907. | 47,876 | 13% | 313 | 153 | 23% | ... | 97 | ... | 28% | 1,396 | 622 | 359 | 216 |
| 1908. | 50,267 | 21% | 449 | 112 | 9% | ... | 118 | ... | 12% | 1,445 | 671 | 383 | 240 |

NOTE:—

Per cent. decrease of fatal accidents in 1908 over 1907.....

26.7%

Per cent. of decrease in tonnage.....

18.7%

TABLE SHOWING THE NUMBER OF TONS OF COAL MINED TO THE LIFE LOST, TO THE SERIOUS INJURY AND TO THE TOTAL NUMBER OF FATAL AND SERIOUS ACCIDENTS FOR EACH YEAR SINCE THE CREATION OF THE DEPARTMENT.

| Years. | Number of Fatal Accidents. | Number of Serious Accidents. | Number of Tons Mined to the Persons Killed or Seriously Injured and Number of Tons to the Total. | | | Name of Chief Mine Inspector. |
|----------------------------|----------------------------|------------------------------|--|----------|---------|-------------------------------|
| | | | Fatal. | Serious. | Total. | |
| Fiscal 1874..... | 20 | 80 | 108,919 | 4,844 | 31,419 | Andrew Roy. |
| " 1875..... | 23 | 40 | 202,667 | 121,606 | 77,210 | " |
| " 1876..... | 13 | 70 | 269,999 | 50,000 | 42,168 | " |
| " 1877..... | 30 | 39 | 175,000 | 134,615 | 76,087 | " |
| " 1878..... | 20 | | | | | Jas. D. Posten. |
| " 1879..... | | | | | | David Owen. |
| " 1880..... | 22 | 61 | 292,624 | 114,754 | 84,217 | Andrew Roy.. |
| " 1881..... | 29 | | 283,621 | | | " |
| " 1882..... | 25 | | 378,000 | | | " |
| " 1883..... | 26 | | 316,516 | | | " |
| " 1884..... | 26 | 40 | 226,636 | 143,433 | 86,932 | Thos. B. Baneroff. |
| " 1885..... | 51 | 32 | 244,258 | 153,258 | 94,170 | " |
| " 1886..... | 43 | 65 | 194,308 | 194,772 | 78,104 | " |
| " 1887..... | 36 | 75 | 286,158 | 137,356 | 92,808 | " |
| " 1888..... | 29 | 79 | 376,239 | 138,113 | 100,934 | Robt. M. Haseltine. |
| " 1889..... | 33 | 52 | 330,527 | 209,757 | 128,322 | " |
| " 1890..... | 42 | 52 | 280,687 | 226,708 | 125,413 | " |
| " 1891..... | 44 | 66 | 296,595 | 197,730 | 118,636 | " |
| " 1892..... | 42 | 93 | 347,929 | 157,129 | 108,170 | " |
| " 1893..... | 32 | 123 | 463,378 | 120,553 | 95,655 | " |
| " 1894..... | 45 | 116 | 364,672 | 102,674 | 73,976 | " |
| " 1895..... | 52 | 152 | 263,151 | 90,025 | 67,078 | " |
| " 1896..... | 41 | 159 | 314,942 | 81,211 | 64,563 | " |
| " 1897..... | 40 | 142 | 311,221 | 87,668 | 68,400 | " |
| " 1898..... | 52 | 155 | 270,463 | 90,736 | 67,913 | " |
| " 1899..... | 59 | 204 | 269,643 | 77,985 | 60,490 | " |
| " 1900..... | 68 | 207 | 285,686 | 93,848 | 70,643 | Elmer G. Biddison. |
| " 1901..... | 72 | 276 | 282,240 | 73,627 | 58,394 | " |
| " 1902..... | 81 | 298 | 293,818 | 80,299 | 63,138 | " |
| " 1903..... | 114 | 324 | 215,555 | 75,843 | 56,103 | " |
| *Nov. 15-Dec. 31, 1903.... | 22 | 26 | | | | " |
| Calendar year 1904..... | 118 | 316 | 208,337 | 77,797 | 58,984 | George Harrison. |
| Calendar year 1905..... | 114 | 372 | 226,628 | 69,448 | 53,158 | " |
| Calendar year 1906..... | 127 | 384 | 214,279 | 70,865 | 53,255 | " |
| Calendar year 1907..... | 153 | 493 | 211,542 | 65,651 | 50,102 | " |
| Calendar year 1908..... | 112 | 426 | 234,713 | 61,708 | 48,862 | " |

NOTE—Fatal accidents in calendar year 1903 were 124. Serious accidents in calendar year 1903 were 309.

*The 22 fatal and 26 serious accidents are not included in the fiscal year 1903 nor in the calendar year 1904.

DETAILED SYNOPSIS OF FATAL ACCIDENTS OCCURRING IN THE MINES
OF THE STATE OF OHIO FOR THE YEAR 1908.

ATHENS COUNTY.

FALL OF ROOF.

March 20th.—Jas. I. Green, American, 52 years old, was killed by a fall of drawslate at the Juniper No. 2 mine, at the face of room No. 8, 6th East Entry. The roof had been examined, and was apparently safe. While the machine was making the sixth run, a pot of slate fell next the face. A good supply of timber was on hand.

June 4th.—Thos. Marshall, American, 59 years old, killed at mine No. 201, Sunday Creek Co., in room No. 11 on 9th West Entry. A rib shot had been fired and they were loading a car and working at the shot. Evidently he had been stooping down, as the lower part of the coal fell and caught his head, crushing it on the floor.

PREMATURE BLAST.

August 1st.—Lawrence North, American, 28 years old, killed at the Nelsonville Brick Company's clay mine by a premature explosion of dynamite in a room near the property line, about 150 feet from daylight. Two top holes had been lighted, and when going off they went back to light the bottom holes; while looking for the fuse the shot on the right rib went off, killing deceased instantly.

BELMONT COUNTY.

FALL OF ROOF.

January 6th.—Frank Andrews, Slav, 24 years old. Killed at the Black Diamond mine by fall of stone. Shot fired on right side of room. Deceased was loading coal from shot, which loosened the stone, causing it to fall. There was no chance to post this stone and it should have been pried down. Distance of face from breakthrough on the right, thirty feet; on the left, forty-five feet.

January 8th.—John Ardulon, Roumanian, 25 years old. Killed at the Florence mine by fall of stone. Deceased was loading coal from under soapstone, with two posts under same. There was a slip running through it near the center of the room, which, no doubt, helped to release it. Depth of room from entry, seventy feet, with no breakthrough made, but one marked off.

February 10th.—Antan Palfi, Hungarian, 32 years old. Killed at Taggart mine by fall of soapstone. Deceased was barring down coal which had been loosened by the blast. Distance from face to nearest breakthrough, forty feet. He was standing under the edge of the overhanging soapstone, when the coal fell, killing him.

February 15th.—Bannie Sandwisk, Italian, 37 years old. Killed at Carnegie mine by fall of soapstone. Deceased and his partner had just fired a shot and knew the stone had been loosened by the blast. Both were experienced miners. Deceased held mine-foreman certificate from Germany, where he had worked in the mines. Distance from last breakthrough to face, seventy feet. The desire to load a car of coal was responsible for his death.

February 20th.—Steve Tokey, Slav, 28 years old. Killed by fall of slate at the Pultney mine. Deceased was loading and taking down coal from under the soapstone while knowing roof to be in a dangerous condition, without taking the usual precaution to either prop the stone or take it down. Posts had been provided for this propping.

March 11th.—Emmett Demuzzio, Italian, 32 years old. Killed at Empire No. 1 mine by fall of stone. The place was twenty-five feet wide and eighteen feet from last breakthrough to face. On the right side sixteen feet in room No. 5 on 9 West Entry. Deceased had been told to place posts under the stone.

March 13th.—Chas. Gueschal, Pole, 32 years old. Killed at the Black Oak mine by fall of stone. Place was in good condition, aside from lack of posts under the soapstone. Distance from last breakthrough to face, sixty feet; in room No. 10 on West 5th Entry.

March 13th.—John Copral, Slav, 40 years old. Injured by fall of stone at the Barton mine, and died March 16th. Distance from entry to face of room, fifty-five feet, in room No. 5, 7 right, 8th face. Deceased had fired a shot in the center of the room. The soapstone from the previous cut extended back for a distance of three feet from the face, the coal running to a feather edge. The hole just fired was under this piece of stone.

March 14th.—Steve Buloge, Hungarian, 40 years old. Killed by fall of stone, at Crescent No. 3 mine in room No. 1 and No. 2, 24th Right Entry. The rooms were in good condition. Distance from last breakthrough to face, sixty-two feet on both sides. Deceased had been warned a few minutes previous to the accident to take down the stone. The soapstone in this room is of a very greasy, soft nature, and very dangerous.

March 17th.—Martin Schlautz, Bohemian, 54 years old. Injured by fall of stone in Wheeling Creek mine, and died March 24th. Deceased worked in room No. 28, 25th East Entry. Breakthrough at face on right side and on left side thirty feet from face. Was loading coal off of the front shot. He was taken to the hospital and later died of pneumonia.

March 20th.—Frank Malaki, Pole, 23 years old. Killed by fall of slate, Glen mine, room No. 4, 9th Right Entry. Distance from last breakthrough to face, forty-two feet. On right side.

March 20th.—John Toaszak, Austrian, 31 years old. Killed by fall of stone at Dellora mine. He was working in room No. 8, 2nd East, 3rd South. Distance from entry to face, seventy-five feet, with no breakthrough.

March 24th.—Jno. Burke, Austrian, 45 years old. Killed at Lansing mine by fall of stone. He was loading coal. Breakthrough on either side twenty-

four feet from face. Two posts had been set on one side of the room under the soapstone. He was probably loading coal under the part of the room that was not posted.

April 30th.—Rudolph Bonacast, Italian, 26 years old. Injured March 9th, Glen mine, by fall of stone; died April 30th. Deceased was injured in room No. 3, 3rd West Entry, and six feet from face. He had been told to take the stone down.

May 25th.—Jno. Minus, Greek, 30 years old. Killed by fall of stone in Provident mine. The soapstone fell out between the post and rib, a distance of seven feet. Three good stone posts were set under the stone. Distance from face of room to breakthrough on either side sixty-eight feet, with a breakthrough marked off.

September 4th.—Adolph Pastor, Bohemian, 54 years old. Killed by fall of slate in Crescent No. 3 mine. Three cars were loaded, and he had started on the fourth in room No. 1, 24th entry, off 7th face. Distance from entry to face, 312 feet. Twenty-eight feet wide and sixty-two feet from last breakthrough.

September 4th.—Jos. Macinsky, Hungarian, 34 years old. Killed by fall of slate in Barton mine, in 7th room on 4th right entry off 5th face entry. Deceased was digging the bottom coal from under the stone with no post protection. Stone fell and killed him.

September 12th.—John Hlas, Slav, 45 years old. Killed by fall of stone in Lorena mine, in room 13, 6th right entry. Impossible for inspector to take measurement of stone on account of man having gone in and started the place without the knowledge of the boss. Deceased was working alone. Room was well posted all the way in. Deceased had been cautioned to take more care of stone in his place.

September 12th.—Mike Delcho, Slav, 28 years old. Killed by fall of stone in Lansing mine. He was working in room No. 12, 18th west entry off of main north. Deceased, while in the act of knocking post from under the stone to take it down, caused the fall of stone, with above result.

October 11th.—Stony Mostick, Pole, 36 years old. Injured October 1st, by fall of roof coal in Boggs mine, and died October 11th. He was cutting in room No. 8 on 5th left entry. The roof where the machine was working was very tender. No posts were under the roof coal while using the machine. This accident was never reported, the inspector and coroner learning of it indirectly.

October 21st.—Edward Johnson, American, 18 years old. Killed by fall of stone in Black Diamond mine in room No. 22. The stone had not been posted; the nearest post to the face on the side where he was killed was seventeen feet back, and on the other side from twelve to thirteen feet back.

November 2nd.—John Sity, Slav, 27 years old. Injured November 2nd by fall of stone in the Purselove mine, and died November 8th. His leg was crushed by fall of stone, necessitating amputation. Deceased persistently refused to have this done, developing blood poisoning, causing death.

November 20th.—Wenzel Tabozek, Bohemian, 40 years old. Killed by fall of stone in Black Diamond mine, room No. 14. The condition of the room indi-

cated that both men were practical miners, and was a case of too much risk. Width of place, twenty-five feet; 103 feet from entry and twenty-three feet from breakthrough. The inspector states the accident was purely accidental, but might have been avoided by more care.

December 17th.—Melia Menich, Austrian, 32 years old. Killed by fall of stone in Dellora mine, room No. 2, east on 2nd north face entry. The room was about all cleaned up, a small part being left in the left-hand corner. There was one-third of stone roof supported by one post; deceased was either pulling same down, or knocking the post out with a pick when the stone fell.

December 30th.—Jos. Gurlow, Pole, 33 years old. Killed by fall of stone in Provident mine. Room was well posted, and the post was either not well set or it could not support the amount of stone; otherwise, the room was well posted. Killed in room No. 9, 4th N. east entry while loading a car.

KILLED BY MINE CARS.

January 24th.—Jno. Patterson, American, 20 years. Killed at Neffs No. 1 mine by being caught between mine car and rib. Deceased was dropping a trip of cars which he had just brought to the passway down against the other loaded cars standing on the side track. He was standing between the last two cars, when the car he was on went against the others. He jumped off on the wrong side, and was rolled through a space of four inches by the last car. There was a space of two feet nine inches on the other side. Width of entry, seven feet ten inches; width of car, four feet nine inches.

January 29th.—Jos. Schlatt. Austrian, 28 years old. Injured at Provident mine by a collision of motor and cars, and died February 3rd from blood poisoning. result of injury to leg. Deceased was carelessly operating the motor to exceed speed limit.

March 28th.—Emmett Robb, American, 20 years old. Killed by trip of mine cars in the Pultney mine. He was injured by mine cars on the slope, caused by link of chain breaking, allowing cars to come rushing back. The slope is a very steep one, probably 45 degrees. The cars were probably off the track about 115 feet before they struck the deceased.

May 6th.—Joe Leon, Italian, 24 years old. Injured in Lorena mine, May 1st, by being squeezed between motor and mine cars; died May 6th. Deceased was evidently endeavoring to jump on the moving trip between seventh and eighth car, and was rolled between car and rib in the space of about six inches.

May 15th.—Otto Ault, American, 32 years old. Killed by mine cars running down slope at Glen mine. Deceased was assisting in delivering to the hoisting chain some twenty-one dirt cars. Slope was about 225 feet long. Something happened to the chain, allowing ten or twelve empty cars to run unretarded down the slope. One car jumped the track, causing his death.

July 29th.—Andy Bardou, Slav, 25 years old. Killed while riding on trip in the Union mine. He was run over by loaded car on tippie. Deceased had rid-

den from bottom of slope to top on a loaded car. Just after the car passed over the knuckle, deceased fell off in front of car. The inspector states the accident was due to negligence on part of the deceased for riding trip, and due to negligence on part of the management for allowing this to be done.

August 22nd.—Geo. Sentock, Slav, 23 years. Killed by being run over by motor trip on the inside of Empire No. 6 mine. Sentock and his partner were proceeding out of the mine along the motor road. When 569 feet from the mouth of mine, they got in a man hole to let motor pass. One hundred and fifty feet from where the two men had taken safety in the man hole, the motor was cut loose from the trip, running in advance of the trip, and after the motor had passed, the men stepped out on the road, when the trip coming from behind struck them. Entry seven feet four inches wide; eight feet six inches high, where deceased was killed. From where the motor was cut loose from the cars to the landing place is 719 feet, and the trip of forty-five cars was run uncontrolled the whole distance, with no trip rider, and without a light or signal of any kind.

September 25th.—Christ Bokovich, Austrian, 25 years old. Killed by being squeezed between mine car and rib in the Provident mine. Deceased met his death while attempting to board a trip of empty cars to ride into the mine, contrary to the rules of the State Mining Department.

October 1st.—Chas. Collins, American, 44 years old. Killed while riding motor which ran into empty mine cars in Empire No. 1 mine. This collision was due to the carelessness of trip rider, whose duty it was to see that the main entry was clear before signalling the motorman to come ahead with his trip. Two day men were permitted by motorman to ride on the motor, which collided with fifteen empty cars lost off the empty trip going in.

October 5th.—Selesta Gilla, Italian, 20 years old. Killed by being run over by mine cars in the Black Oak mine. Deceased was riding on the tail-chain between the mule and front car, falling off in front of cars. The first car ran over part of his body, causing his death. Deceased had been warned about riding in front of the car at this particular place.

December 4th.—Louis Bacco, Italian, 30 years old. Crushed between motor and side of entry in Virginia Hill mine. He was attempting to step between motor and side of entry at the front end of the motor.

KILLED BY ELECTRICITY.

February 17th.—S. G. Duvall, American, 36 years old. Electrocuted at Barton mine by coming in contact with an electric wire. There was no witness to the accident, but he appears to have been crossing from one entry to another between cars and came in contact with the trolley wire, although there was plenty of room to pass the cars at both sides and ends. It is possible that he may have been between the cars to uncouple them. Height of wire from top of rail, five feet four inches in air course; height of wire in 1st left entry at point between the cars is five feet. One wire was found knocked down when the body was discovered, said to have been in its place a short time be-

fore the accident. Part of the mine where the accident occurred had been suspended for a number of months. Nothing being done in this section but cleaning falls out of the air course on idle days. A 500-volt plant.

June 17th.—Luigi Marcale, Italian, 26 years old. Killed by coming in contact with an electric wire in the West Wheeling mine. Deceased was riding on the front end of two loaded cars, when he ran into two empty cars which he had previously cut off of his trip to gather from entry No. 4. When the mule met the cars, the driver and mule were thrown into the live electric wire of 500 volts. Entry eight feet six inches wide. Roof had previously fallen out in the place where deceased was killed, making it about eight feet high.

October 9th.—Jno. Seko, Slav, 24 years old. Electrocuted by mining machine in Troll No. 2 mine. Deceased was killed while in the act of removing a machine from truck in the entryway without removing the cable from off the wire. Deceased probably came in contact with the starting box while using the bar against the truck. He was working in another man's place, and was not a regular machine runner.

November 5th.—Louis Keis, Hungarian, 27 years old. Electrocuted by an electric wire in Barton mine. Deceased met his death while crossing between trip of empties, when he collided with the trolley line carrying 500 volts. The wire was at the regular place, according to the mining law.

MISCELLANEOUS.

May 14th.—Joe Farnack, Bohemian, 27 years old. Killed by post which was knocked out by mine car jumping track in Wheeling Creek mine. Deceased was employed as miner. While absent from working place, and when sitting at the junction of 31st east and 2nd face entries, two empty cars jumped the track at a frog and knocked out the post, striking deceased on head and killing him instantly.

October 7th.—Jacob J. Gerken, American, 52 years old. Found dead on stone dump at the Provident mine. Deceased was overcome by suffocation with sulphur fumes from a burning slack pile. He was working by himself, shoveling slack away from the woodwork near the tippie.

CARROLL COUNTY.

FALL OF ROOF.

March 24th.—Geo. McDonald, American, 20 years old. Killed by fall of stone in Magnolia mine, in room No. 6 off 1st west entry. The room was driven six feet from entry, and breakthrough thirty feet from face. The place was well posted. He and his brother were working on the machine, and while cutting the place the stone fell.

September 12th.—Holland Russell, American, 33 years old. Killed by fall of roof in Tripp mine. This was a domestic mine, and while working alone, the

deceased received mortal wound in the forehead above the right eye. He had failed to post the place, although he had been warned to do so.

September 18th.—Frank Molloy, American, 29 years old. Killed by fall of stone in Somers No. 2 mine in room No. 4, off 8th west entry. The place was cut by the machine just previous to the accident. The inspector states that it was purely an unforeseen accident.

COLUMBIANA COUNTY.

FALL OF ROOF.

May 9th.—Frank Featheringham and Robert Tolson, Americans, 23 and 35 years old, respectively. Killed by fall of stone in the Ohio Coal and Coke mine, room No. 2, 4th west entry. There was a distance of thirty-five feet from entry, and place was well posted to within nine feet of face. The machine was moved into the place, and one of the posts was in the road of the machine; being knocked out, the roof gave way, killing both men. There was a slip running across the room inside the last row of posts making a turn at both ribs toward the face, indicating a very large pot in the roof, which broke off across the face of coal.

June 18th.—J. C. Thompson, American, 43 years old. Killed by fall of rock in the Big Walnut mine. While deceased was in the entry cleaning up a fall of slate, the accident occurred. He had just finished and was waiting to go on the trip when the stone fell. Accident happened at the starting time. Roof showed a little weakness. The width of place at accident was twelve feet and eleven inches. No timber was used in posting at this place, and it is supposed that the occurrence was purely accidental.

FALL OF TIMBER.

May 27th.—Frank Skinner, American, 32 years old. Killed by falling timber while attempting to rescue two men who had been injured by an explosion of gas in the Garside mine. The timber fell down the shaft, striking deceased on the head, killing him instantly.

EXPLOSION.

May 27th.—Jno. Rowe and W. J. Wright, Americans, 36 and 43 years of age, respectively, were killed by an explosion of gas in the Garside mine while in the mine for the purpose of loading coal for boilers. Wright was carrying safety lamp, but they had open lights on their heads. Two cars had been sent up, and the supposition is that Wright started the fan, which had not been running for several days, or at least went for this purpose, when an explosion occurred, killing Rowe and injuring Wright so that he died at 5:00 o'clock the

same day. The ventilating fan had been removed from top of exhaust shaft into the mine, and could not be started until some one went into the mine for that purpose.

PREMATURE BLAST.

November 20th.—Jos. Winters, American, 39 years old. Killed by explosion of powder in Tucker mine. This was a small country mine, and deceased was in act of testing powder which had become damp. While testing same, flames spread and exploded keg of powder, injuring him so that he died several hours later.

COSHOCTON COUNTY.

FALL OF ROOF.

September 11th.—Wesley Moore, American, 59 years old, killed by fall of rock in Oden Valley mine. Nearest post to face on left side where the accident happened was fifteen feet. On right roadway, fifteen feet nine inches. Accident due largely to carelessness on part of deceased.

GUERNSEY COUNTY.

FALL OF ROOF.

January 7th.—Jos. Allender, American, 14 years old. Killed by fall of slate in the Klondyke mine, in room twenty-three feet wide and driven fifty-three feet in advance of last breakthrough, with good top. A cluster of small pots and slips severed the drawslate on the east side of the track thirteen feet from face. Wm. Allender, father of the deceased, had fired the shot and commenced loading the first car after the blast when the slate fell in the center, eight feet by eight feet and four inches thick, crushing skull of deceased.

January 30th.—Jno. W. Urwin, American, 60 years old. Killed by fall of roof in Imperial mine. The deceased and partner, employed as loaders, commenced wedging the snubbings off after the room had been cut preparatory to blasting the coal, when, without warning, an oblong pot running lengthwise of the track fell, striking deceased. He was caught between the rails six and one-half feet from the face of the room.

February 20th.—Mike Buchura, Slav, 19 years old, killed in Imperial mine by fall of slate. This loosened slate was within six feet of his working place. While starting to load coal, he reached to pull the slate down with his fingers, when two or three tons of slate fell on him, killing him. The piece of slate had been loosened by two slips about five feet apart, and running to a point to the center where it was eight inches thick. One post had been set in front of the car and two idle ones were laying in the entry.

February 29th.—Wm. James, American, 19 years old. Killed in Detroit mine by fall of slate. Deceased came to his death by mine car jumping track,

striking post, causing the slate to fall on him. The mine cars were not spragged, and were going too fast over a bad track.

March 24th.—Jos. Shuhayda, Slav, 45 years old. Killed by fall of slate at Ohio No. 2 mine. The deceased was loading coal from a breakthrough while drawing a pillar, and was killed in his working place, which was well posted. The cause was a squeeze in the hill, which resulted in the slate breaking at the face of the coal.

April 4th.—Alonzo Shelton, American, 21 years old, injured by fall of slate March 31st, in Ohio No. 2 mine, and died April 4th. He was on the front end of his one-car trip, which he was bringing into the passway between rooms 19 and 20 on No. 4 west entry. No evidence was found of any knowledge of this slate being loose.

July 13th.—August Baer, American, 52 years old. Killed by fall of slate in Midway mine within five feet of face. This was an unforeseen accident.

August 4th.—Geo. M. Nichols, American, 33 years old. Killed by fall of slate in Puritan mine. Deceased was a machine runner and was injured forty-six feet from room face, and not obliged to look after slate at this point. Just at neck of the butt room on No. 2 east entry, post was knocked out by machine on the north side track supporting cross bar.

December 18th.—Jno. Driscoll, American, 49 years old, killed by fall of slate in Trail Run No. 2 mine. Deceased while placing his machine in its working place where timbermen were placing posts under bad roof, was killed by fall of slate. The timbermen were sent to this room to make it safe before being cut by machine men. They were placing a cross bar over the track back from the face, when the machine men began to unload their machine. They were informed that the room was not yet quite ready, but the machine was unloaded at the face. Deceased stood about six feet from the face, moving front end of machine toward the west rib with a bar, when the drawslate broke. Room was exceptionally well timbered back to the entry.

MINE CARS.

January 24th.—Andy Alex, Slav, 49 years old. Killed by trip of mine cars in Old Orchard mine. Deceased came to his death while attempting to cross a track between the cars when they were about to move, and was whirled between car and rib, crushing him through hips and spine, causing death. From the circumstances it is believed that the deceased was of the opinion that the trip was at its destination. The inspector states that he believes the abolishment of making running switches in mines would decrease the dangers connected with mining.

April 20th.—Samuel Bonom, American, 31 years old. Killed by motor colliding with empty trip in the Imperial mine. Deceased was riding motor in his own coal mine and collided with empty cars.

November 4th.—Ernest Barrow, American, 21 years old. Killed at the Klondyke mine by being run over by mine cars. Deceased fell under front car of

the trip. He had been driver for six years. Entry ten feet two inches, perfectly clear of gob, with plenty of room alongside to pass or sprag the cars without incurring danger. Indications lead to the belief that the broken bumper, together with an attempt to get on front end of car, were accountable for the fatality. Warning after warning had been posted in the mine about riding on the front of cars down grade.

ELECTRIC WIRE.

November 19th.—Roll Cummings, American, 19 years old. Killed at Trail Run mine by coming in contact with an electric wire. Deceased was a driver. Accident occurred on 25th west entry, and deceased was found lying on the south side of the car opposite the neck of room No. 7. Investigation showed that the feed wire was carried along the north rib of the blind entry and to a breakthrough nearly opposite No. 7. Three insulated wires had been carried through the brattice a distance of twenty-two inches and fastened on wooden pins located about six inches from the west rib of the breakthrough. Insulation had been removed three-quarters of an inch on all three wires about four inches east of the wooden plug, in order to attach the cable while cutting room on 25th west entry. The top wire was nine inches from the top, middle wire one foot from the top; bottom wire eighteen inches from top. Entry six feet high and ten feet wide. The rib where the body was found was five feet from the south rail. Surroundings indicate that the car was off the track, and that deceased put his hand against the wire to slew it, or that he had cut the car off at room No. 5 and was running to catch the front car, stumbled and threw his hand against the wire. Rule No. 6 of the State Mining Department, requiring all wires placed on insulators, was not complied with. Five hundred volts.

FELL OFF TIPPLE.

April 4th.—Lafayette Herald, American, 58 years old. Killed by fall from tippie in Trail Run No. 1 mine. Deceased was killed while working on new tippie, falling from a scantling, precipitating him twenty-two feet below. His negligence was in not providing proper scaffolding.

FELL DOWN SHAFT.

August 30th.—Cleo Phillips, American, 20 years old. Killed by falling from hoisting cage in some unknown manner at the Puritan mine. It appears that he had stepped on the west side of the cage and fell with head and shoulders overhanging the east side.

RAILROAD CARS.

November 15th.—Chas. McMurray, American, 33 years old. Killed by railroad cars on the tippie at Trail Run No. 1 mine. Deceased was trimming rail-

road cars, and while standing at rear of front car facing the tipple, with right foot and leg on inside track, was thrown and caught near the upper part of the tibble by the rear car.

HARRISON COUNTY.

FALL OF ROOF.

June 2nd.—Jno. Farcus, Hungarian, 36 years old. Killed by fall of slate at Majestic mine. Deceased was killed in a narrow place driven from room No. 2 off of 5th E. entry to head of No. 1 room which was caved. The place was driven eighteen feet on the butt, nine feet wide. He was warned to take the stone down, but failed to do so, and it fell, killing him. The room was driven 122 feet from the entry, sixty-three feet inside the breakthrough and five and one-half feet wide, and was fairly well posted.

July 17th.—Ernesto Burginni, Italian, 26 years old. Killed by fall of stone in Roby No. 1 mine. The fall of stone occurred at face of room No. 8, turning off at 13 west entry. The room was driven 116 feet, twenty-nine feet beyond the breakthrough, twenty-three feet wide and five feet high. A shot had been fired in the right-hand rib and two cars had been loaded. While loading the third car the stone fell and killed him.

MOTOR.

December 29th.—Rudolph Margat, Polish, 14 years old. Killed by being run over by motor at Roby No. 1 mine. He was not an employe of the company, and had been ordered away at different times. Deceased, when killed, was riding on the motor running five cars of stone out to the stone dump. He pulled the pin for the motor to cut off from the cars, and when the motorman speeded the motor up, the deceased fell off the motor and was run over by the loaded stone cars.

HOCKING COUNTY.

FALL OF ROOF.

October 16th.—Jno. Lowes, American, 63 years old, killed by fall of slate in Carbon Hill mine. Deceased was considered a practical miner. This is rock top entry, with six inches to one foot of drawslate, taken down with every crossing without the use of timber. Deceased had sounded the top and was of the opinion that it would be necessary to wedge it or drill a hole in it and shoot it down.

MINE CARS.

July 24th.—Clarence Miller, American, 19 years old. Killed at New Pittsburg No. 5 mine by being run over by mine car. Deceased was a coal hauler, and was killed in 3rd east entry, north side of mine at room No. 4. Miller got off the rear end of car and ran around to the front end, missed his hold, and

fell in front of cars. This was the last trip out at dinner time. The drivers had been warned about riding on front end of cars, still were permitted to do so.

MISCELLANEOUS.

February 28th.—Jefferson Robinson, American, 56 years old. Killed at Jobs mine Nos. 2 and 3, while working on boiler house. This was an unforeseen accident. Deceased, with seven others, was engaged in raising two joints of four-inch pipe, forty feet long, intended for a ginn pole in the boiler house with which to lower a smoke stack; while raising same, rope broke, causing death of deceased.

JEFFERSON COUNTY.

FALL OF ROOF.

January 22nd.—Jno. Good, Pole, 26 years old. Killed at Plum Run No. 3 mine by a fall of slate. Deceased was eight months in this country and employed in the mines one month. His partner had been a miner for twenty-five years, and states that they had one post set under the stone. The soapstone had been taken down on both sides of the room, but a piece was left standing in the middle of the room. The coroner in his verdict states that this death was due to the negligence of a fellow workman.

February 15th.—Andy Yagella, Pole, 24 years old. Killed at Roby No. 2 mine by a fall of slate. Deceased was drawing pillars and working between rooms 16 and 17, and had the pillars between entry drawn back to within sixteen and one-half feet of the breakthrough. They were taking the first cut off and had mined it all the way across, three and one-half feet deep, and had shot both bottom and top coal at one end, taking out probably eight feet of the entire sixteen and one-half feet, leaving the slate up at this end without any support. They had the coal loaded out of this end that had been shot down, and had shot the bottom coal out of the other end, and while loading a car the top coal broke off at the back of the cut, falling on deceased and killing him.

February 29th.—Geo. Gereguch, Pole, 54 years old. Killed by fall of stone at the U. S. No. 9 mine. Deceased was killed seventy feet from entry to face while loading coal with a stone overhanging, with one post under it. The soapstone was more or less shattered by the shot fired in the coal. There was also a slip near the back of the cut which loosened the stone that fell and tripped post.

June 2d.—Jos. Sorgeki, Hungarian, 45 years old. Killed by fall of stone at Rush Run No. 2 mine. He was engaged in putting up cross timbers on the main entry. Deceased had previously sounded the roof, and supposed it to be safe.

June 18th.—Mike Kurzwar, Pole, 35 years old. Killed by fall of stone at Dillon No. 2 mine in room No. 1, 22nd east entry. Deceased was in the act of setting post under the stone. Room 140 feet from entry, twenty-four feet wide and forty-three feet inside the breakthrough. Room was well posted. Had good roof and very strong roof stone over the coal.

June 24th.—Andy Turplace and John Prosser, Hungarians, 20 and 21 years old, respectively. Killed by fall of stone in the U. S. No. 1 mine. The distance from face of room to breakthrough, nine feet. The slip cut stone at the rib along the face. Accident occurred in room No. 3 on 3rd right.

July 16th.—Nicholas Brant, Austrian, 26 years old. Killed by fall of roof in Rush Run No. 1 mine. He was cutting with mining machine in room No. 3 6th right entry. He had knocked out one post which was set near the center of the room; unloading machine, proceeded to cut room without resetting the post. Four runs were completed and the fifth commenced when the stone fell, killing him instantly.

July 27th.—Jno. Patsko, Slav, 22 years old. Killed at the Goucher mine by fall of stone. Deceased was killed at face of room, forty-five feet from entry. Patsko and his partner had fired and loaded out part of crossing of coal on right side of room, and taken precautions to post the stone where coal had first been shot down, two posts having been set in space of eleven feet. They later shot the left side, the shot just setting the coal down. The stone was yet in place over the coal, with very little, if any, overhanging. Deceased commenced to load coal from side last fired, when stone fell on coal and broke the front of the coal so that the stone was overbalanced, falling on deceased, killing him instantly. It would not have been practical to have posted this stone.

August 4th.—Jos. Montana, Italian, 33 years old. Killed by fall of stone in U. S. No. 2 mine, in room No. 5, 5th east entry and 3rd north face entry. Room driven 108 feet from entry, with a breakthrough on the right hand at face where accident occurred.

August 19th.—Steve Andusis, Hungarian, 22 years old. Killed by fall of stone in the U. S. No. 2 mine, Room 12, turned off 1st west entry, off 2nd north face. The room was driven ninety-one feet and thirty-two feet inside of breakthrough. The entire cut was almost loaded, with but one post under the stone.

MINE CAR.

December 2nd.—Bryant Vowak, Pole, 25 years old. Injured at the Amsterdam mine August 18th, by being run over by mine cars, dying from effects of injury on December 2nd. Deceased was driver at night, and was coming out of 1st west on south side. At the cross-cut there is a little grade, and canvas hung in this place. He endeavored to hold the car back a little, but there being no heels on his shoes, his feet slipped from under him, the car running over him, doubling up his back. The brake was on the other side of the car, and if he had been on the rear end he could have held the car. He was taken to the hospital, where it was discovered his back was broken.

FALL FROM TIPPLE.

July 22nd.—Germano Muze, Italian, 29 years old. Killed by fall from tippie at U. S. mine. Deceased was landing trip of cars on tippie. Some cars jumped

the track at the frog, and in pulling the cars on the track the planks were torn loose and a tie broken out. A plank was placed over, but not nailed down. Deceased, while on his way over the trestle with a tie to replace the broken one, stepped on this loose plank; the plank, as well as deceased, fell through the trestle to the ground below. Deceased, as well as company, knew condition of the trestle.

CAUGHT IN MINING MACHINE.

December 12th.—Elijah Hennis, American, 15 years old. Leg caught in mining machine, Rush Run No. 2 mine; toe of right shoe caught on one of the bits of mining machine chain, leg shredded from knee down. No shield on machine, although evidence showed there had been one, as there was a piece of it left, but no protection. Distance from last breakthrough to face, eighteen feet on right side. Deceased was working with his father.

MEIGS COUNTY.

FALL OF ROOF.

June 20th.—H. C. Latimer, American, 20 years old, killed at Hobson mine by fall of slate. In dark west entry, 133 feet from face. He was superintendent of the mine, and from the evidence it appears that he was very careless, although a practical man. The roof was very tender and treacherous.

July 30th.—Chas. S. Jones, American, 39 years old. Killed by fall of slate in Charter Oak mine. He was a machine runner, and the accident occurred in room No. 7 on 12 west. The room was driven 188 feet from entry to face and was twenty-four feet ten inches wide. Deceased had been warned to reset three posts that were set across the face as they cut to them, because there was a slip which was unsafe without this protection. The advice was unheeded. Accident due to negligence on part of victim.

September 9th.—Chas. H. Williams, American, 24 years old. Killed at Hobson mine in room No. 6 on 2nd west off south entry. The room was not yet widened, being driven from the entry seventeen feet, and was twelve feet six inches wide. Deceased was not a practical miner, and evidence showed negligence on the part of management, knowing the place to be dangerous and not seeing that it was properly timbered or taken down, and so somewhat responsible for the accident.

November 16th.—Albert Young and Jas. R. Stobart, Americans, 29 and 63 years of age, respectively. Killed by fall of roof in the Stobart mine. The accident occurred in room No. 8, 1st west entry. Their deaths were probably due to a squeeze. The accident occurred in a small country mine opened by Robert Stobart. The deceased were killed within fifty feet from the face of the room. Two breakthroughs on the east side of the room, and one about twenty feet from face. If these men had gone to the breakthrough, both would have escaped.

MORGAN COUNTY.

MINE CAR.

November 30th.—Wm. Hardy, American, 26 years old. Killed in Tropic mine by being run over by mine cars. Deceased was motorman, running a six-ton Jeffrey motor; from cause unknown failed to make usual stop for signal, but came straight through, colliding with a trip of empty cars that were being pushed off bottom for main west entry switches. The grade where the accident occurred was very steep for a distance of 500 feet from the main west entry.

PERRY COUNTY.

FALL OF ROOF.

January 16th.—T. T. Jones, American, 39 years old. Killed at XX No. 2 mine by fall of soapstone. The place was well posted and appeared to be cared for by experienced and careful men. The stone fell in a space between the nearest post and face of coal, which was eight feet. There was a breakthrough at the face of room at right-hand rib, and on the left about twenty feet from the face. The place is only fourteen feet wide, but was approaching the crop line, and on this account the roof was more tender. The cap of the post was broken off close to the post by the fall, evidently without warning.

January 31st.—Steve Coolidge, Hungarian, 52 years old. Killed by coal from standing shot in Sunday Creek No. 203. Deceased was engaged in working off a standing shot in a breakthrough on left-hand rib at face of room. The place was properly posted, with breakthrough on right-hand rib at the face, and one being made on the left hand. Everything indicated that experienced men had driven the place, which was 240 feet from entry. In view of these facts, the stupidity of working off the shot in this manner is difficult to explain.

May 19th.—Jno. K. Fox, American, 45 years old. Killed by fall of top coal at the Jenkins & Redfern mine. Accident occurred in what is known as Fisher main entry. Deceased was engaged in drawing pillar coal. Place twenty-six feet wide. When body was removed an ax was found close to body, and a post nearly chopped in two, showing that deceased had been in the act of preparing to post the roof.

September 24th.—Jno. Port, American, 49 years old. Killed by fall of roof at the Upson mine. Deceased was drawing pillars within the 12th breakthrough. West entry, including pillar, twenty-four feet. Properly timbered place would probably have prevented the accident.

STARK COUNTY.

FALL OF ROOF.

October 17th.—Jno. Burke, American, 42 years old. Killed by fall of roof in the Massillon Coal Company's No. 12 mine. Drawing pillars in room No. 4,

2nd entry. The pillar had been followed up about thirty-five feet, one shot wide, taking their road with them. They had reached the breakthrough and were bringing the pillar back to a breakthrough. The roof is very strong in this part of the mine and gave no warning. The place was well timbered.

November 16th.—Eugene Peterman, American, 50 years old. Injured November 16th by fall of slate in the Wise Bros. mine, and died November 19th. Deceased was employed drawing pillars in room No. 1, main entry, and was instructed by the mine boss not to work inside the breakthrough, but to start the pillar and work back. Deceased saw an opportunity for a shot inside the breakthrough, and drilled a hole and fired it, loosening the stone and working under same, which should either have been taken down or securely posted, which was not done.

TUSCARAWAS COUNTY.

FALL OF ROOF.

February 26th.—Robert Jones, American, 40 years old. Killed by fall of stone in Acme mine. Deceased was a roadman, and was in the act of placing posts and timbers at a dangerous place in the roof of the entry. He inadvertently loosened a piece of rock, which fell, fracturing his skull, causing death. Not having sufficient pillar had caused a slight creep at this point, and while the stone may have sounded solid, the weight had cracked it near the coal along the rib. The jar of the pick loosened it. All connected with the accident were practical men.

April 28th.—Jno. Burgis, American, 43 years old. Killed at the Burgis mine by a fall of stone. Killed while working in his own domestic mine. Plenty of good posts were near the track at the mouth of the mine.

September 19th.—Frank Mazzelini, Italian, 26 years old. Injured at the Midvale-Goshen mine by a fall of rock, and died September 19th. The rock was supposed to have been loosened by a shot made for coal, and dropped suddenly without warning. All human and ordinary precautions had been taken for protecting employees. An unforeseen accident.

September 26th.—Jas. B. Kennedy, American, 37 years old. Killed by fall of rock in Mullins No. 1 mine. Room No. 7 at 7th right entry near the neck. The rock fell without warning. Deceased was in discharge of his duty and at the time of the accident was in the room for the purpose of repairing pipe conveying compressed air.

November 11th.—Angelo Besozzi, Italian, 23 years old. Injured by fall of coal in Midvale-Goshen No. 4 mine, and died November 15th. Deceased was barring off coal between the rooms when the piece fell and caused injuries that resulted in death four days later.

SHOT BLOWING THROUGH RIB.

October 30th.—Ardabino Vincenzo, Italian, 23 years old, killed by shot blowing through rib in Mullins No. 1 mine. Accident occurred in room No. 2, 11th west entry, circumstances of which are peculiar. One shot was fired on the left rib of the room, another in the center, and still another unfired, with needle still in the hole and squib ready to light. Circumstances point to the belief that he was on the way to light the shot, when another shot from room No. 3 blew through, killing him instantly. The shot which blew through the rib was eighteen feet from face of room No. 2 and thirty-eight feet from breakthrough.

DETAILED REPORT OF FATAL ACCIDENTS RESULTING
FROM ELECTRICITY FROM 1896-1908, INCLUSIVE.

The following is a detailed report of all fatal accidents reported to this office where death resulted from persons coming in contact with electric wires, from mining machines charged with electricity, or electricity in some form in use in the mines of the state.

The first accident was reported in 1896, where there was some difference of opinion as to whether the accident was due to electricity or from heart failure.

Since that time the list has increased until in 1907 eleven persons met death in this way, and in 1908, five were reported.

INQUEST OF JNO. MATHENY (AMERICAN).

Hartford Mine, Guernsey County, Oct. 7, 1896.

Jno. Matheny was employed at the Hartford mine, and while conversing with Isaac Unklesby was seen to stumble, and in falling came in contact with the electric wires. The casualty was so unusual as to warrant a careful investigation. The services of Dr. A. M. Belle, Professor of Physiology at the Ohio State University, were secured, who, with the assistance of several resident physicians, held an autopsy which resulted in the coroner's finding that death was attributable to heart failure. The fatality was so reported in the annual report of that year. The voltage carried at this mine at that time was 500 alternating current.

INQUEST OF WESLEY McHENRY (AMERICAN).

Hartford Mine, Guernsey County, Feb. 17, 1897.

Wesley McHenry, while passing a mine car, slipped and in falling his hand came in contact with one of a series of three wires used for the transmission of power. Although several persons were near, he died before he could be removed. The services of Dr. Belle were again secured, and as a result of the autopsy, the coroner found that death resulted from coming in contact with electric wires.

INQUEST OF JNO. FONTELLA (AUSTRIAN).

New Pittsburg, Athens Co., No. 9 Mine.

Jno. Fontella was found dead on third east side of No. 9 mine. He seemed to have fallen full length from a point at least four feet from the power line; his feet were about four and one-half feet from the wire and his head and neck were over it. The wire was said to be about three and one-half feet from the floor of the mine and near the rib of the entry, leaving a space of at least three

and one-half to four feet in which to walk. The return wire was broken at a point beyond the place of accident, so that the current was entirely on the wire. A voltage of 250 was carried at this mine.

INQUEST OF DANIEL JENKINS (AMERICAN).

Tom Corwin No. 1, Jackson County, Ohio.

Killed Dec. 13, 1902.

Mr. Jenkins was employed as a track layer. On Dec. 13, after finishing his day's work, he walked down the entry toward the tool box. While walking, evidently on the rail to keep his feet from getting wet, he slipped, throwing his right hand against the post to protect or steady himself. His right arm caught the positive electric wire which was suspended on said post, and breaking down with his weight, fell downward in the pool of water. He was last seen at 3:30 p. m.

INQUEST OF GEO. D. LOOMAN (AMERICAN).

La Belle Mine, Jefferson County, Ohio.

Killed Feb. 24, 1902.

Mr. Looman was descending in the bucket down the shaft, when electric flashes were observed, and that instant the derrick fell, dropping across the mouth of the shaft. Mr. Looman fell down to the bottom and was instantly killed. This accident was undoubtedly due to the wire ropes attached to the derrick being charged with electricity and the hoisting rope of the beam and one of the guy ropes coming in contact produced a short circuit, immediately burning both ropes in two, with the above result.

INQUEST OF SHERMAN PARKHURST (AMERICAN).

Dillon No. 2 Mine, Jefferson County, O.

Killed June 13, 1902.

Mr. Parkhurst was the trip rider on the outside motor. He came in contact with the trolley, which killed him instantly.

INQUEST OF STEVE GARSTIC (FOREIGNER).

Brilliant Mine, Jefferson County, O.

Killed Jan. 19, 1903.

The wire known as the feed wire was depressed about 10 inches from its proper place by reason of a flat stone having fallen on it. There was also water

in the entry. Steve Garstic accidentally came in contact with the wire, and standing in the water, received a greater shock than if the entry had been perfectly dry. Was electrocuted by a voltage of only 240 volts.

INQUEST OF GEO. FRANCIS (AMERICAN).

Luhrig No. 2 Mine, Athens County, O.

Killed April 24, 1903.

Geo. Francis was working as a lineman and had been working in water up to his shoulders. He was on his way out to change clothes, when he accidentally struck the electric trolley wire, and his wet condition made the contact with the live wire so great that it killed him.

INQUEST OF ABER DARIN (FOREIGNER).

Amsterdam Mine, Jefferson County, O.

Killed June 14, 1904.

Aber Darin was out at the mouth of the room to get an empty car, and in some way got on the live wire and was killed. The wire was hung close to the rib and the distance between car and wire was three feet.

INQUEST OF ROSS DEGARME (FOREIGNER).

Kelley No. 2, Jefferson County, Ohio.

Killed Sept. 1, 1904.

Mr. DeGarme was attempting to pass between the cars and a post, holding up a cross-piece supporting the trolley wire. The post was shoved out from under said cross-piece, letting it down, the live trolley wire striking Mr. DeGarme across the right side of the neck, electrocuting him. Inspector recommends that a close inspection should be made and see that posts are properly set when supporting cross beams for live wires.

INQUEST OF ANTHONY WALEIKO.

U. S. No. 7 Mine, Jefferson County, O.

Killed Jan. 5, 1905.

Anthony Waleiko (Polish) was coming out of the mine carrying a drill. It is supposed as he was passing along a trip of cars that his drill came in con-

tact with the trolley wire, which threw him against the wire. The wire was against the side of his head, holding him on his feet for some little time after he was dead. Voltage 500.

INQUEST OF JAMES PANNOCK.

Walnut Hill No. 1 Mine, Jefferson County, O.

Killed Feb. 4, 1905.

Jas. Pannock (Polish) and several others were walking along the main entry, coming out. Alongside the track the motor was passing with 20 empty cars, and when he came to the 16th car, it is supposed that he fell with his neck on the trolley wire, killing him instantly. This was his second day in the mine. The company carries a high voltage of 550 volts.

INQUEST OF ZELMO BUCCO.

U. S. No. 9 Mine, Jefferson County, O.

Killed July 1, 1905.

Zelmo Bucco (Italian) had pushed a loaded car out of his room. On the entry, in order to get an empty back into the room, and a slight grade existing, he and his buddy were trying to stop the car, when Bucco is supposed to have struck the wire with his hand, throwing him against a wire, striking his head and neck, causing instant death. Was employed two years, and considered a practical miner. Voltage 500.

INQUEST OF JOHN POSEC.

U. S. Plum Run No. 4, Jefferson County, O.

Killed Oct. 3, 1905.

Jno. Posec (Hungarian) was employed as timberman, and was putting up some posts in fourth right entry. He accidentally came in contact with the machine feed wire, sustaining an electrical shock which resulted in his almost instant death. Voltage 500.

INQUEST OF STEVE KOVACS.

Barton Mine, Belmont County, O.

Killed Nov. 29, 1905.

Steve Kovacs (Hungarian) came out of mine with auger on his shoulder, holding it in his left hand. In passing the cars, the auger struck a live wire and knocked him down, killing him instantly. Voltage 500.

INQUEST OF FRANK SHROLL.**Noble Mine, Noble County, O.****Killed Dec. 15, 1905.**

Frank Shroll (Polish) had squared up his entry and gone out after a machine runner. A driver was coming down the entry and noticed a light following his car. Mule ran into an empty car, and as loaded car ran back, Mr. Shroll is presumed to have stepped to one side, tripped on the water pipe and fallen toward the rib, striking live wire which was four feet from the bottom and ten inches from the rib, caused by a slight crook in the pillar. With his hands on the wire and his legs on the pipe a short circuit was created, and he died as soon as released from the wire. Voltage 250.

INQUEST OF THOS. A. CAMPBELL (AMERICAN).**Doanville Mine, Athens County, O.****Killed August 9, 1906.**

August 9, 1906, Thomas A. Campbell was working on night shift and at 8 o'clock, with Elisha Probst, went back to eat some lunch. His partner went to get some squibs, and upon returning in about one minute found him lying with his neck across the wire. The wire had been previously hung on the same side as the working place, but when the place was started the wire was cut 40 feet below and taken across the haulway and up the opposite side of the entry 30 feet above the working place and then taken back to the same side. The original wire was of two O O. but that used for the temporary work was No. 1, which was carelessly hung or laid alongside the entry. The regular traveling way where Mr. Campbell was killed is 15 feet wide, or seven feet from the haulway wire. Apparently the men were very careless, as they had a keg of powder hidden under some slate, with which the live wire came in contact, and kept their oil on the other side of the wire, so they were compelled to climb over the wire to get it. Voltage 250.

INQUEST OF GEO. JEFFERS (AMERICAN).**Pultney Mine, Belmont County, O.****Killed January 3, 1906.**

January 3, 1906. Geo. Jeffers was working in No. 1 room on No. 2 right entry, and had come out of his room with an empty car. The driver being there with two. Jeffers was pushing his car back to the parting, and fell down in the track. The doctor seemed of the opinion that he died of heart disease, but the driver stated he saw a flash before he fell, and the supposition is he came in contact with the electric wire. Voltage carried 250 direct current.

INQUEST OF JOSEPH VERBA (BOHEMIAN).**Black Diamond Mine, Belmont County, O.****Killed June 21, 1906.**

Jos. Verba was found alongside of entry dead. Supposed to have followed the first trip into the passway and was passing cars on the side on which the trolley wire is located. Five hundred volts carried, direct current. Entry was seven feet wide and height is five feet from rail. Trolley wire is twelve inches from the top and seven inches from the side at this point. There is a fair traveling way, and the miners are not supposed to travel on the motor road during working hours. No one witnessed the accident.

INQUEST OF STANI DAVANI (POLE).**Detroit Mine, Guernsey County, O.****Killed July 10, 1906.**

This accident had no witnesses, but circumstances surrounding it indicate that he was passing under the trolley line on the main entry at the No. 2 W. Entry, and came in contact with the wire, killing him instantly. Trolley wire was in its usual place where deceased had crossed each day for fifty days. Trolley line was four feet six inches above top of motor rail when accident occurred. Two hundred and fifty voltage carried. Deceased had passed under the trolley line, which was a little to the south side of the entry, and was going to pass between two cars of the loaded trip to get on the south side of the main entry where the men collect to be hoisted out.

INQUEST OF THOS. WHEATLEY (AMERICAN).**West Pittsburg Mine, Jefferson County, O.****Killed October 4, 1906.**

Body found electrocuted lying in water alongside of entry. Live wire was about two feet from the roof, and water was fourteen inches deep, and must have been within ten inches of the live wire. Entry was twelve feet wide, and from the rail to the rib was about six and one-half.

INQUEST OF HERBERT WILSON (AMERICAN).**U. S. No. 9 Mine, Jefferson County, O.****Killed November 14, 1906.**

Herbert Wilson was electrocuted on mining machine. Deceased had just completed cutting the entry and was in the act of barring his machine around

in order to cut a breakthrough, and must have slipped and fallen on machine. His partner was also helpless for a time, but finally succeeded in extricating himself. Voltage 500.

INQUEST OF NICHOLAS SAVAGE (AMERICAN).

San Toy No. 2 Mine, Perry County, O.

Killed August 18, 1906.

Nicholas Savage was driver at No. 2 mine, and jumped on motor to hold the trolley pole. Accident occurred on the east end of the motor switch, on the 1st W Entry off N., on west side of the mine, as the motor was there about four feet from the trolley wire and the pole would not reach so that it could trail behind, the result being that when the motor started the pole was directly in front with Mr. Savage braced against the lamp stand with the pole between him and the rib when the motor started. It is presumed that when the motor struck the curve rail of the switch it deflected it toward the rib next the wire, which caused the pole to slew with a sudden jerk just as the motor jumped the outside rail and doubled up the victim between the trolley pole and top of motor. Distance between trolley pole and top of motor and trolley wire only fourteen and one-half inches. Voltage 250.

INQUEST OF GABE BOZO (HUNGARIAN).

Peabody No. 2 Mine, Perry County, O.

Killed September 19, 1906.

Neck came in contact with electric wire while unloading a car of posts. Two hundred and fifty voltage. Accident occurred at the latches of room No. 7, 1st North entry, which is 11.5 wide at that point. Body was found three feet from east rib, or almost under the trolley wire. Entry is four feet one inch high and trolley wire one inch from roof. Rails entering room as well as those on the entry are bonded on account of motor haulage in rooms.

INQUEST GEO. BRODI (ROUMANIAN).

San Toy No. 2, Perry County, O.

Killed November 14, 1906.

Geo. Brodi was electrocuted by riding out on motor trip in a car which had been attached to it unknown to driver. He raised up and struck the trolley wire, killing him instantly. Width of the bottom where accident occurred inside of the timbers was thirteen feet eight inches, with double track four feet apart. The height from bottom to timber was four feet two inches; from bottom to wire three feet eight inches, and from wire to timber five inches; from top of

wire to the slate between the timbers where he raised himself was one foot five inches; on the opposite side the space between timbers and car was but one foot.

INQUEST OF CLYDE ASHMAN (AMERICAN).

Hutson No. 4 Mine, Portage County, O.

Killed October 24, 1906.

Clyde Ashman was electrocuted by mining machine. One of the buttons fell on the frame of the machine, charging it. Deceased was in act of cutting a jack hole and got on the machine with his hands, killing him. Two others were shocked. Deceased was a practical miner, but had only worked four days on the machine. Voltage over 250.

INQUEST OF HERMAN ZELWSKY.

Black Diamond Mine, Belmont County, O.

Killed March 18, 1907.

Herman Zelwsky (Polander) and partner were on their way home, and near the outside instead of going along an open track which was clear, they went along the entry where empty cars were standing as they were delivered from the tippie; not having room to pass the cars they attempted to cross to opposite side, where they thought they could get past the empty cars. In passing over, deceased struck his face against the trolley wire. The road was not used as a traveling way, and the men had orders not to go this way. Voltage 500. Height of trolley wire from top of rail five feet five inches; from top of car to wire, eighteen inches. Width of entry between timbers, six feet six inches. Width of car, four feet four inches.

INQUEST OF RUDOLPH BLISKA.

Empire No. 1 Mine, Belmont County, O.

Killed June 26, 1907.

Rudolph Bliska (German) was in the act of walking into the empty pass-way with an iron crowbar on his right shoulder when he attempted to cross over from the right-hand side of the track to the left-hand side; with one foot on the rail, the crowbar over his shoulder, he accidentally came in contact with the wire overhead, killing him instantly. Five hundred voltage.

INQUEST OF MIKE PCHARO.

Florence Mine, Belmont County, O.

Killed August 24, 1907.

Mike Pcharo (Slav) was electrocuted at this mine by accidentally coming in contact with the trolley wire of 550 voltage. Deceased was riding on an empty car back of motor No. 6. He was holding the cable against the wire at the entrance of the mine, and carelessly stood up in the car, which brought the back of his head in contact with the wire. The trolley wire was out of service on account of a broken harp; as a result they were using the cable for a trolley, and the deceased was engaged in holding the end of the cable against the trolley wire.

INQUEST OF PAUL VESIE.

Crescent 3½ Mine, Belmont County, O.

Killed November 26, 1907.

Paul Vesie was killed by an electric shock received while in the act of setting up a mining machine in a room of the Crescent 3½ mine. A jack was accidentally dropped, falling against the nipple of the reel connecting the current with the machine. At the time of the accident Paul Vesie had his foot, probably the left one, on the front end of the machine, receiving a voltage of 250 volts, killing him instantly.

INQUEST OF JOHN BROWN.

Trail Run Mine, Guernsey County, O.

Killed June 3, 1907.

Jno. Brown (American) was considered an expert machine operator, and had operated machines in this mine off and on for the past eleven years. On the day on which he met his death he and his partner were unloading the machine preparatory to setting it up. From the circumstances surrounding the accident, it was evident that he had come in contact with the live wire in some manner and that the insulation was rotten and impaired, exposing the wires in several places. An eye witness of the accident was of the opinion that this man's wrist came in contact with a bare place on the cable when making connection. Voltage 500. The coroner in his finding states that the covering of the wire was worn off, and a request for a new wire was made, but not furnished, showing neglect.

INQUEST OF DAVID TAYLORSON.**Zerbe Mine, Jefferson County, O.****Killed January 2, 1907.**

David Taylorson (American) had ceased his day's work, and on his way to get his coat and bucket, when by some means he stumbled and fell, coming in contact with the live wire which supplied power to the coal-cutting machines. It also appeared that while this wire was insulated, there were portions of same where the insulation was worn off and the bare wire exposed. The coroner in his verdict is of the opinion that the feed wire should be placed next the roof, where miners would not come in contact with same, or should be placed along the pillars away from the general work and travel of the miners; and should the same be placed near the bottom it should be so constructed and insulated that miners coming in contact with it would not be killed or seriously injured. He thinks the better practice would be to place them in a remote place away from all danger to the miners, such as placing them next to the roof or along the pillars away from the general line of work of the loader. Voltage 250.

INQUEST OF ANDY MARTINOCKI.**Walnut Hill No. 2 Mine, Jefferson County, O.****Killed May 27, 1907.**

Andy Martinocki (Polish) was electrocuted while in the act of moving cutting machine. According to the coroner's finding, negligence was in evidence in that the cable was defective, and that notice of same had been given, having been out of repair and unfit for use for six weeks. Voltage 500.

INQUEST OF JOS. PEASLE.**U. S. No. 1 Mine, Jefferson County, O.****Killed July 2, 1907.**

Jos. Peasle (Bohemian), 17 years old, was electrocuted in this mine by coming in contact with an electric wire at No. 1 switch. It appears he anticipated going in the mine to take his father's place as loader, but on going in there was a fall of slate on the entry in which he expected to load coal, and decided to go home. He went outside and was on the trolley, got on the motor and rode into the mine again. In getting off the motor, he came in contact with the trolley wire, killing him instantly. The riding on motors is a direct violation of the Rules and Regulations of the Mining Department, which was posted up at all mines in the state. Voltage 500.

INQUEST OF THOS. STADNICK.

Walnut Hill No. 2 Mine, Jefferson County, O.

Killed September 14, 1907.

Thos. Stadnick (Polish), in company with several others, crowded themselves past loaded cars at the passway through a space of fourteen inches between car and rib instead of traveling through the breakthrough and alongside of the empty cars, as this was the entry he would eventually have to get on after he passed the loaded cars. Voltage 550.

INQUEST OF GEO. COWIE.

Pittsburg Mine, Meigs County, O.

Killed September 27, 1907.

Geo. Cowie, a night pumper, was electrocuted by a direct current of 500 volts. He was found lying on a Jeffrey machine motor box which had been rigged up to operate a pump, a pulley having been attached to the armature shaft. He was found at 2 o'clock in the morning, and he appears to have been in the act of oiling the motor. He had the oil can in his right hand, and placed his left hand on the motor box, which no doubt was grounded. This is the first instance of this kind coming to the attention of the mining department, and is unquestionably a very careless as well as dangerous practice, and should not be permitted in any of the mines of the state.

INQUEST OF JNO. MCGOWAN.

Reeves No. 2 Mine, Tuscarawas County, Ohio.

Killed September 11, 1907.

Jno. McGowan (Scotchman) was employed to keep railroad switches and motor roads in repair outside this mine, and was preparing to raise some low joints in the motor line leading to the mine tippie. While in the act of bringing some tools for this purpose, and when stepping on the frog of the switch leading to the blacksmith shop from the boiler house switch, the bar he was carrying came in contact with the boiler house trolley line. The shock threw deceased back on the west side of the trolley line between the rails, with his head pointing north, 105 feet south of the mine entrance. Voltage 250, direct current. This man had never worked inside a mine, and was probably not familiar with the many dangers surrounding electric wires.

INQUEST OF S. G. DUVALL (AMERICAN).**Barton Mine, Belmont County, O.****Killed February 17, 1908.**

S. G. Duvall, 36 years old, was electrocuted at Barton mine by coming in contact with an electric wire. There was no witness to the accident, but he appears to have been crossing from one entry to another between cars and came in contact with the trolley wire, although there was plenty of room to pass the cars at both sides and ends. It is possible that he may have been between the cars to uncouple them. Height of wire from top of rail, five feet four inches in air course; height of wire in 1st Left Entry at point between the cars is five feet. One wire was found knocked down when the body was discovered, said to have been in its place a short time before the accident. Part of the mine where the accident occurred had been suspended for a number of months. Nothing was being done in this section but cleaning falls out of the air course on idle days. A 500-volt plant.

INQUEST OF LUIGGI MARCALE (ITALIAN).**West Wheeling Mine, Belmont County, O.****Killed June 17, 1908.**

Luigi Marcale, 26 years old, was killed by coming in contact with an electric wire in the West Wheeling mine. Deceased was riding on the front end of two loaded cars, when he ran into two empty cars which he had previously cut off of his trip to gather from entry No. 4. When the mule met the cars, the driver and mule were thrown into the live electric wire of 500 volts. Entry eight feet six inches wide. Roof had previously fallen out in the place where deceased was killed, making it about eight feet high.

INQUEST OF JNO. SEKO (SLAV).**Troll No. 2 Mine, Belmont County, O.****Killed October 9, 1908.**

Jno. Seko, 24 years old, was electrocuted by mining machine in Troll No. 2 mine. Deceased was killed while in the act of removing a machine from truck in the entryway without removing the cable from off the wire. Deceased probably came in contact with the starting-box while using the bar against the truck. He was working in another man's place and was not a regular machine runner.

INQUEST OF LOUIS KEIS (HUNGARIAN).**Barton Mine, Belmont County, O.****Killed November 5, 1908.**

Louis Keis, 27 years old, was electrocuted by an electric wire in Barton mine. Deceased met his death while crossing between trip of empties, when he collided with the trolley line carrying 500 volts. The wire was at the regular place according to the mining law.

INQUEST OF ROLL CUMMINGS (AMERICAN).**Trail Run Mine, Guernsey County, O.****Killed November 19, 1908.**

Roll Cummings, 19 years old, was killed at Trail Run mine by coming in contact with an electric wire. Deceased was a driver. Accident occurred on 25th West Entry, and deceased was found lying on the south side of the car opposite the neck of room No. 7. Investigation showed that the feed wire was carried along the north rib of the blind entry and to a breakthrough nearly opposite No. 7. Three insulated wires had been carried through the brattice a distance of twenty-two inches and fastened on wooden pins located about six inches from the west rib of the breakthrough. Insulation had been removed three-quarters of an inch on all three wires about four inches east of the wooden plug, in order to attach the cable while cutting room on 25th West Entry. The top wire was nine inches from the top; middle wire one foot from the top; bottom wire eighteen inches from top. Entry six feet high and ten feet wide. The rib where the body was found was five feet from the south wall. Surroundings indicate that the car was off the track, and that deceased put his hand against the wire to slew it, or that he had cut the car off at room No. 5 and was running to catch the front car, stumbled and threw his hand against the wire. Rule No. 6 of the State Mining Department, requiring all wires placed on insulators, was not complied with. Five hundred volts.

LIST OF SERIOUS ACCIDENTS FROM JANUARY 1, 1908, TO DECEMBER 31, 1908—ATHENS COUNTY.

| Date. | Name. | Nationality | Age. | Character of Injury. | Cause of Accident. | Name of Mine. |
|----------|-----------------------|-------------|------|--|---|-------------------|
| Jan. 3 | Jas. Roach..... | American. | 26 | Right foot injured..... | Run over by mine cars..... | No. 255. |
| Jan. 4 | Conrad Hafner..... | American. | 41 | Right hand injured..... | By coal falling down shaft..... | Luhrig. |
| Jan. 20 | Miles Barrett..... | American. | 18 | Foot injured..... | Caught between motor and door..... | No. 24. |
| Jan. 22 | Wallace W. Burns..... | American. | 58 | Hips and bowels injured..... | Fall of roof..... | Federal Coal Co. |
| Jan. 27 | Alfred Hicks..... | American. | 37 | Both legs broken..... | Mine cars jumping track..... | Elm Rock. |
| Feb. 4 | Henry Reynolds..... | American. | 40 | Arm broken..... | Fall of slate..... | York, C. & M. Co. |
| Feb. 5 | Jno. Collins..... | American. | 38 | Three ribs broken and left side injured..... | | |
| Feb. 5 | Robert Leak..... | American. | 57 | Leg broken..... | Fall of slate..... | Elm Rock. |
| Feb. 6 | Andrew Robson..... | American. | 26 | Leg broken..... | Fall of coal..... | No. 281. |
| Feb. 21 | Albert Smith..... | American. | 40 | Ribs broken..... | Mine cars..... | New Pitts, No. 5. |
| March 2 | W. C. Pidecock..... | American. | 43 | Back injured..... | Fall of slate..... | Nel. Coal Co. |
| March 24 | Fred McLeid..... | American. | 26 | Right arm broken..... | Fall of top coal..... | Del Carbo. |
| March 29 | Solomon Walker..... | American. | 40 | Back injured..... | Falling down shaft..... | Luhrig. |
| March 29 | Thos. Goodfellow..... | American. | 55 | Right arm and legs injured..... | Fall of soapstone..... | Eclipse. |
| March 31 | Henry Morrison..... | American. | 22 | Arm broken..... | Fall of stone..... | Eclipse. |
| April 23 | Jno. Potts..... | American. | 24 | Left foot injured..... | Falling down shaft..... | No. 24. |
| June 15 | A. B. Ylse..... | American. | 17 | Leg broken..... | Mine car..... | Kittanning. |
| June 24 | Clyde McChoe..... | American. | 24 | Ankle injured..... | Fall of bone coal..... | New Pitts, No. 7. |
| June 27 | Geo. Herbst..... | American. | 35 | Leg broken..... | Fall of coal..... | Luhrig. |
| July 14 | Jno. Loper..... | American. | 29 | Pelvic bone fractured..... | Mining machine..... | No. 24. |
| July 17 | Thos. Mooney..... | American. | 49 | Chest injured..... | Fall of soapstone..... | Kittanning. |
| July 17 | Fred McInaws..... | American. | 17 | Chest and back injured..... | Fall of roof..... | No. 256. |
| July 21 | Geo. Yates..... | American. | 50 | Hand injured..... | Fall of roof..... | No. 256. |
| July 23 | Ben Edwards..... | American. | 14 | Leg injured..... | Caught between mine car and timber..... | York Clay No. 2. |
| July 27 | Peter Maillard..... | American. | 41 | Foot injured..... | Mine cars..... | No. 267. |
| July 30 | Frank High..... | American. | 32 | Back injured..... | Fall of coal..... | No. 255. |
| July 31 | Chas. Smith..... | American. | 22 | Leg broken..... | Fall of slate..... | New Pitts, No. 7. |
| Aug. 1 | Peter Gregovsky..... | Hungarian. | 42 | Face and body injured..... | Fall of coal..... | Kittanning. |
| Aug. 3 | Alvey Hahn..... | American. | 18 | Ankle injured..... | Fall of roof..... | Canaanville. |
| Aug. 3 | Wm. Hahn..... | American. | 48 | Hand injured..... | Fall of coal..... | Luhrig. |
| Aug. 5 | Geo. Snyder..... | American. | 52 | Two ribs broken..... | Fall of top coal..... | Luhrig. |
| Aug. 6 | Michael Robert..... | Hungarian. | 24 | Face and hand injured..... | Falling in sump..... | S. C. No. 255. |
| | | | | | Explosion of powder..... | Monareh. |

| Date | Name | Age | Nationality | Injury | Description of Injury | Location |
|----------|-------------------|-----|-------------|--|--|------------------------|
| | | | | | | |
| Aug. 6 | Wm. Rice | 49 | American | Leg broken | Fall of coal from mine car | No. 256. |
| Aug. 6 | Sam Wyatt | 28 | American | Collar bone broken | Caught between car and rib | No. 255. |
| Aug. 13 | Jas. Johnson | 28 | American | Foot sprained | Fall of slate | Carbondale. |
| Aug. 15 | Merion Brown | 45 | American | Leg injured | Caught between bumpers | Canaanville. |
| Sept. 1 | Edward Turner | 44 | American | Three ribs fractured | Fall of slate | No. 10. |
| Sept. 3 | Clifford Evans | 24 | American | Both legs broken | Fall of slate | Edgell & Young. |
| Sept. 8 | Lewis Novak | 39 | American | Seven ribs and collar bone broken | Fall of slate | No. 209. |
| Sept. 11 | Bert Smathers | 14 | American | Leg crushed | Fall of roof | New York No. 31. |
| Sept. 12 | Jno. Davis | 38 | American | Arm injured | Mine cars | Eclipse. |
| Sept. 15 | Dan Collins | 62 | American | Ruptured | Falling from mine car on tippie | No. 209. |
| Sept. 18 | Harvey Lowery | 16 | American | Leg broken | Fall from elevator | Doanville No. 1. |
| Sept. 19 | Willis Schoenover | 63 | American | Back injured | Mine car | Doanville No. 1. |
| Oct. 13 | Joe Gleish | 50 | American | Ankle broken | Removing bottom coal from standing shot | Doanville No. 1. |
| Oct. 13 | Wm. Caviekh | 26 | Hungarian | Arm broken | Fall of slate | New York No. 31. |
| Oct. 14 | A. D. Fuller | 30 | American | Fingers of right hand broken | Weighting coal on tippie | Canaan. |
| Oct. 23 | Henry Burns | 65 | American | Hand injured | Caught by crank shaft of engine | Black Diamond. |
| Oct. 26 | Fred Preston | 22 | American | Head cut and hip injured | Fall of soapstone | Kittanning. |
| Nov. 3 | Fred Turner | 27 | American | Left eye burned | Miners' lamp | Lubrig. |
| Nov. 4 | Clint Barker | 28 | American | Eye injured | Piece of coal | Hysylvania. |
| Nov. 5 | Isaac Russell | 48 | American | Leg broken | Fall of slate | C. & H. C. & I. |
| Nov. 7 | Jno. McCombs | 33 | American | Leg injured | Fall of coal | Hocking. |
| Nov. 11 | Joseph Barstoe | 28 | American | Leg injured | Collision between motor and empty | Detroit. |
| Nov. 16 | Mike Buyok | 38 | Hungarian | Leg injured | Fall of coal | No. 10. |
| Nov. 23 | Wm. Slam | 50 | American | Head and body bruised, leg broken and hip dislocated | Fall of slate | Black Diamond. |
| Dec. 3 | Henry Burns | 65 | American | Middle finger injured | Caught by crank shaft of small engine | Black Diamond. |
| Dec. 3 | Ira Huffman | 25 | American | Middle finger cut off | Caught between wheel and shaft of dynamo | Doanville No. 1. |
| Dec. 11 | Cliff Sines | 35 | American | Three ribs broken | Fall of slate | Detroit. |
| Dec. 12 | Chas. Dowler | 33 | American | Shoulder dislocated | Caught between motor and rib | C. & H. C. & I. No. 1. |
| Dec. 23 | Chester Vansickle | 33 | American | Chest and leg injured | Fall of slate | |

LIST OF SERIOUS ACCIDENTS—Continued—BELMONT COUNTY.

| Date. | Name. | Nationality. | Age. | Character of Injury. | Cause of Accident. | Name of Mine. |
|----------|-------------------|--------------|------|---|------------------------------------|----------------------|
| Jan. 13 | Seth Jones. | American. | 39 | Left hand injured | Premature explosion. | Troll No. 1. |
| Jan. 25 | Geo. Sugi. | Hungarian | 47 | Leg broken. | Fall of stone. | Gaylord. |
| Jan. 30 | Joe Brumm. | American. | 22 | Leg fractured. | Fall of roof. | Pitts-Belmont No. 1. |
| Feb. 2 | Peter Valoszyk. | Slav. | 31 | Foot injured. | Fall of stone. | Neffs No. 1. |
| Feb. 7 | Wm. Painter. | American. | 50 | Two ribs broken, hip dislocated. | Fall of stone. | Gaylord. |
| Feb. 8 | Peter Slansky. | Slav. | 22 | Foot injured and amputated. | Car jumping track. | Neff No. 2. |
| Feb. 10 | W. P. Haydon. | American. | 25 | Leg bruised & ankle sprained. | Caught between motor and mine car. | Troll No. 1. |
| Feb. 11 | Lewis Buck. | American. | 20 | Thumb amputated. | Fall of coal. | Gaylord. |
| Feb. 11 | Paul Gurgz. | Hungarian | 43 | Leg broken. | Fall of stone. | Gaylord. |
| Feb. 19 | Peter Koozer. | American. | 49 | Collar bone broken, hips squeezed. | Fall of stone. | Gaylord. |
| Feb. 20 | Tony Audenia. | Italian. | 28 | Left leg broken. | Fall of coal. | Media. |
| Feb. 21 | Michael Linder. | Hungarian | 35 | Leg broken. | Fall of slate. | Empire No. 1. |
| Feb. 24 | Michael Balish. | Greek. | 19 | Leg broken. | Mine car. | Maple Hill. |
| March 7 | Tom Huter. | Hungarian. | 30 | Head injured. | Fall of stone. | Moore's Run. |
| March 7 | Chas. Burdy. | American. | 29 | Wrist broken. | Fall of stone. | Barton. |
| March 9 | Albert Marsh. | Italian. | 26 | Thumb broken. | Caught between mine cars. | Trolls No. 1 and 2. |
| March 11 | Joe Lishti. | Hungarian. | 28 | Finger cut off. | Fall of coal and slate. | Glen. |
| March 11 | Anton Stok. | Polish. | 21 | Foot crushed. | Caught in lifting mining machine. | Gaylord. |
| March 11 | Joe Hasn. | Hungarian. | 22 | Legs and back injured. | Fall of slate. | Pitts-Belmont. |
| March 17 | Mayna Hutchinson. | American. | 62 | Hand cut. | Falling between cars. | Florence. |
| March 17 | Herbert Childers. | American. | 18 | Arm run over, necessitating amputation. | Fall of slate. | Florence. |
| March 20 | Jno. Spidl. | Polish. | 32 | Foot injured. | Run over by mine car. | Pitts-Belmont No. 1. |
| March 23 | Pat Cox. | American. | 62 | Back injured and ankle fractured. | Fall of stone. | Wheeling Creek. |
| March 25 | Wm. Doren. | American. | 22 | Foot injured. | Fall of roof. | Tunnel. |
| March 27 | Albert Ducker. | American. | 16 | Leg broken. | Caught between mine car and motor. | Florence. |
| May 4 | Oliver Hollam. | American. | 35 | Toe cut off. | Caught between empty mine car. | Barton. |
| May 5 | Steve Julip. | Italian. | 34 | Foot injured. | Mining machine. | Barton. |
| May 9 | Frank Johnson. | American. | 38 | Arm and one rib broken. | Fall of stone. | Florence. |
| | | | | | Hoisting cage. | Delora. |

| | | Slav. | 37 | Back bruised and right leg broken. | | |
|-------|----|------------------|----|------------------------------------|-----------------------------------|-----------------------|
| May | 11 | Miko Hudis. | | Arm fractured | Fall of stone. | Barton. |
| May | 11 | Frank Gulbrnots | 18 | Foot mashed | Caught by electric wire | Florence. |
| May | 11 | Joe Van Summer | 18 | Leg fractured | Caught by loaded mine car | Barton. |
| May | 13 | Jno. Yohon. | 17 | Leg broken. | Fall of stone | Florence. |
| May | 15 | I. Berni. | 22 | Leg broken. | Fall of slate | Columbia. |
| May | 19 | Geo. Charlton | 39 | Leg broken. | Fall of roof. | Troll No. 2. |
| May | 23 | Jno. Horvot. | 35 | Legs broken. | Mine car | Barton. |
| May | 25 | R. S. Bowman. | 22 | Shoulder broken | Mine car | Barton. |
| June | 3 | Steve Nagy | 55 | Leg and elbow injured | Fall of coal. | Crescent No. 3. |
| June | 6 | Ivera Dgarnor. | 27 | Foot mashed | Mine cars | Boggs. |
| June | 13 | Mike Lekey | 36 | Back broken | Fall of slate | Provident. |
| June | 18 | Steve Baroli. | 36 | Hip injured | Motor trip | Rail and River No. 2. |
| June | 19 | Wm. Hardy | 36 | Collar bone broken | Falling on cage | La Grange. |
| June | 24 | Frank Kroky. | 19 | Foot injured | Car jumped track | Black Diamond. |
| June | 26 | Mariah Mille | 23 | Head and body injured | Fall of stone | Rail and River. |
| July | 7 | Jas. Bosley | 35 | Leg broken | Fall of slate | Maple Hill. |
| July | 12 | German Cearing | 28 | Back injured | Falling under car of loaded stone | Maple Hill. |
| July | 14 | Jno. Frank | 37 | Leg broken; face and hands injured | Fall of stone | Florence. |
| Aug. | 3 | Lee Slager | 28 | Arm broken | Fall soapstone | Glen. |
| Aug. | 8 | Jno. Danin | 30 | Foot injured | Caught between mine cars | Barton. |
| Aug. | 9 | Adam Brown | 42 | Toe cut off | Mining machine. | Rail and River. |
| Aug. | 11 | Wm. Johnson | 48 | Foot injured | Fall of coal | Rail and River. |
| Aug. | 17 | Joe Veden | 25 | Chest injured | Caught between car and rib | Barton. |
| Aug. | 22 | Joe Miller | 22 | Hip dislocated | Caught between motor and trip. | Rail and River. |
| Aug. | 23 | C. N. Sims | 50 | Ankle injured | Fall of coal. | Rail and River. |
| Aug. | 26 | Lon Cook | 24 | Foot injured | Mine car | Rail and River. |
| Sept. | 8 | Frank Jawquer | 33 | Leg and one rib broken | Fall of coal. | Florence. |
| Sept. | 12 | Steve Potne | 25 | Leg broken. | Fall of slate | Edgehill. |
| Sept. | 14 | E. A. Freeman. | 53 | Chest injured | Mine car | Carnegie. |
| Sept. | 14 | F. F. Jefferies. | 38 | Leg broken. | Mining machine. | Glen. |
| Sept. | 15 | Low Milgrosky | 22 | Back injured | Fall of slate | West Wheeling. |
| Sept. | 17 | Joe Hasbniek | 32 | Leg broken. | Fall of slate | Lorena. |
| Sept. | 18 | Albert Cook | 28 | Arm broken | Jumping on trip. | Rail and River No. 2. |
| Sept. | 18 | Tom Liston. | 30 | Ankle sprained | Loading mine car on track | Gaylord. |
| Sept. | 21 | Albert Rubossky | 34 | Two scalp wounds and rib broken | Fall of stone. | Florence. |
| Sept. | 22 | Jno. Strysila | 43 | Leg broken. | Fall of stone. | Victor. |

LIST OF SERIOUS ACCIDENTS—Continued.—BELMONT COUNTY—Concluded.

| Date. | Name. | Nationality | Age. | Character of Injury. | Cause of Accident. | Name of Mine. |
|-----------------|-----------------------|--------------|------|---------------------------------------|----------------------------------|-----------------|
| Sept. 22 | Fred Estes..... | American. | 18 | Two ribs and collar bone broken..... | Mine car collision..... | Glen. |
| Sept. 26 | Wm. Smith..... | American. | 28 | Foot and leg injured..... | Mining machine..... | Glen. |
| Oct. 2 | Gurthier Allen..... | American. | 27 | Foot injured..... | Mine car..... | Pipe Creek. |
| Oct. 9 | Frank Kernosky..... | Slav..... | 33 | Foot mashed..... | Mining machine..... | Barton. |
| Oct. 9 | Jno. Bradley..... | American. | 35 | Foot injured..... | Mine car..... | Pipe Creek. |
| Oct. 13 | Jno. Katelish..... | Hungarian | 43 | Ankle dislocated..... | Fall of roof..... | Gaylord. |
| Oct. 19 | Jas. Curley..... | American. | 50 | Foot mashed..... | Fall of stone..... | West Wheeling. |
| Oct. 21 | Ed. Johnson..... | American. | 18 | Back and legs injured..... | Fall of soapstone..... | Black Diamond. |
| Oct. 22 | Andy Crynog..... | Hungarian | 32 | Arm and leg bruised and face cut..... | Fall of stone..... | Maple Hill. |
| Oct. 27 | Mike Yanko..... | Slav..... | 45 | Leg, arm and head bruised..... | Fall of stone..... | Maple Hill. |
| Nov. 5 | Jno. Barska..... | Pole..... | 32 | Leg broken..... | Fall of stone..... | Columbia. |
| Nov. 7 | S. E. Hutchinson..... | American. | 22 | Foot injured..... | Fall of stone..... | Florence. |
| Nov. 9 | Nate Collin..... | Slav..... | 24 | Collar bone broken..... | Caught between car and roof..... | Rail and River. |
| Nov. 19 | Peter Samasko..... | Italian..... | 21 | Leg broken..... | Caught by motor..... | Virginia Hill. |
| Nov. 19 | Chandler Narco..... | Hungarian | 21 | Hand injured..... | Fall of stone..... | Florence. |
| Nov. 20 | Jesse Sliner..... | American. | 24 | Hip injured..... | Fall of stone..... | Schicks. |
| Nov. 23 | Andy Orheknoski..... | American. | 43 | Leg broken..... | Fall of stone..... | Black Diamond. |
| Dec. 2 | Stanley Rata..... | Pole..... | 38 | Collar bone broken..... | Switching cars..... | Columbia. |
| Dec. 4 | Frank Sule..... | Hungarian | 29 | Injured seriously..... | Fall of stone..... | Florence. |
| Dec. 9 | Jesse Rayner..... | American. | 40 | Left hand injured..... | Caught between car and post..... | Aetna Standard. |
| Dec. 10 | Jno. Plasky..... | American. | 23 | Leg broken..... | Fall of stone..... | Troll No. 1. |
| Dec. 10 | Joe Lydiek..... | Polish..... | 26 | Hip injured..... | Fall of coal..... | Knob. |
| Dec. 12 | Joe Blaine..... | American. | 47 | Right leg broken..... | Caught between car and prop..... | Carnegie. |
| Dec. 29 | Isaac Fry..... | American. | 48 | Hands and breast burned..... | Explosion of powder..... | Black Diamond. |
| Dec. 31 | Timothy Waters..... | American. | 29 | Hip dislocated..... | Fall of slate..... | Pipe Creek. |
| CARROLL COUNTY. | | | | | | |
| Oct. 15 | Ed. Jones..... | American. | 45 | Hand broken..... | Blocking mine cars..... | Magnolia. |

COLUMBIANA COUNTY.

| | | | | | | |
|---------|----------------------|-----------|----|------------------------------|-------------------------------------|---------------------|
| Feb. 24 | Jno. Ashman..... | American. | 25 | Two ribs broken | Fall of slate | McNab. |
| June 9 | Frank Burger..... | American. | 25 | Foot sprained | Caught under car | Old Slope. |
| June 18 | Jas. Atkinson..... | American. | 28 | Leg crushed | Fall of slate | Big Walnut. |
| Oct. 22 | Duffield Thompson... | American. | 46 | Side, back and foot injured. | Fall of slate | Beech Grove. |
| Nov. 9 | Thomas Burk..... | American. | 33 | Ribs broken | Fall of slate | Strabley. |
| Nov. 19 | Chas. Snyder..... | American. | 30 | Face and hands burned | Blown out shot | Big Walnut. |
| Nov. 19 | C. E. Holt..... | American. | 45 | Face and hands burned | Blown out shot | Big Walnut. |
| Nov. 23 | R. Kerr..... | American. | 30 | Shoulder dislocated | Riding on empty mine cars. | Fairfield No. 3. |
| Dec. 9 | Wm. Lindner..... | American. | 30 | Foot injured..... | Caught between motor and empty car. | New Slope. |
| Dec. 23 | Richard Walters..... | American. | 30 | Back and legs injured..... | Fall of coal | Beech Grove. |
| Dec. 24 | Daniel Bars..... | American. | 30 | Ankle fractured | Fall of slate | Ohio Coal and Clay. |

COSHOCOTON COUNTY.

| | | | | | | |
|----------|----------------------|-----------|----|--------------------------------|--------------------------------|------------------------|
| April 25 | Lewis Dairy..... | American. | 60 | Leg broken..... | Fall of slate | Best No. 1. |
| Aug. 4 | Geo. Pat..... | American. | 34 | Hand injured..... | Mine car jumping track | Coshocoton No. 1 and 2 |
| Sept. 2 | Wm. Wilden..... | American. | 18 | Leg injured..... | Fall of roof | Franklin No. 1 and 2. |
| Sept. 10 | Frank Carrell..... | American. | 45 | Back and hip injured | Caught between mine cars | Drake No. 2. |
| Sept. 15 | Alec Corder..... | American. | 48 | Head and shoulders injured. | Fall of rock | Franklin No. 1 and 2. |
| Oct. 6 | Delos Carpenter..... | American. | 48 | Finger and arm broken | Explosion of powder | Morgan Run No. 3. |
| Oct. 31 | Jno. Lenhart..... | American. | 47 | Hip, arm and shoulder bruised | Fall roof | Drake. |
| Dec. 18 | Geo. Carter..... | American. | 48 | Third finger right hand cut .. | Fall of coal | Col. C. & M. Co. |

GUERNSEY COUNTY.

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|--------|----------------------|-----------|----|--------------------|-----------------------------------|-------------|
| Jan. 4 | Nick Sunniss..... | Slav..... | 32 | Leg broken..... | Fell between slate and post | Ohio No. 2. |
| in. 8 | Chas. Snyder..... | American. | 27 | Hips squeezed..... | Between car and post | Forsythe. |
| in. 24 | Edw. Buchanan..... | American. | 20 | Foot injured..... | Fall of slate | Ideal. |
| in. 24 | Thos. Hagan..... | American. | 20 | Leg broken..... | Fall of slate | Ideal. |
| in. 31 | Robert Alexander.... | American. | 24 | Leg broken..... | Collision of mine cars..... | Forsythe. |

LIST OF SERIOUS ACCIDENTS—Continued—GUERNSEY COUNTY—Concluded.

| Date. | Name. | Nationality. | Age. | Character of Injury. | Cause of Accident. | Name of Mine. |
|----------|------------------|--------------|------|------------------------------------|--|------------------|
| Feb. 4 | Homer Seerist. | American. | 29 | Thumb injured. | Caught with rope on cage. | Imperial. |
| Feb. 10 | Harry Hoy. | American. | 20 | Leg bone cracked. | Caught between mine cars. | Blue Bell. |
| Feb. 10 | Clyde Bonifant. | American. | 24 | Arm broken. | Caught between car and roof. | Black Top. |
| Feb. 12 | Peter Murray. | American. | 23 | Leg broken. | Car jumped track. | Forsythe. |
| Feb. 17 | Odus Beckett. | American. | 21 | Arm broken. | Caught between car and pillar. | Blue Bell. |
| Feb. 29 | Harry Foster. | American. | 27 | Head injured. | Coming in contact with timbers. | Kings. |
| March 3 | Jno. Morrow. | Slav. | 20 | Foot injured. | Machine jumping track. | Murray Hill. |
| March 17 | Frank Norman. | American. | 22 | Leg crushed. | Caught between bumpers of car. | Detroit. |
| March 24 | Jno. Hutton. | American. | 50 | Back and legs injured. | Falling in front of mine cars. | Klondyke. |
| March 24 | Geo. Yobriek. | Hungarian. | 28 | Right leg broken. | Fall of slate. | Walhounding. |
| March 24 | Henry Henderson. | American. | 17 | Stomach injured. | Caught between car and rib, jumping on trip. | Black Top. |
| March 30 | Chas. Stewart. | American. | 40 | Hips injured. | Fall of slate. | Buckeye. |
| March 30 | Jno. Walker. | American. | 25 | Left arm injured. | Caught between rib and motor. | Kings. |
| May 15 | Jno. Petra. | Slav. | 40 | Hip broken. | Fall of slate. | Detroit. |
| May 20 | Chas. Sueddon. | American. | 37 | Back and right ankle broken. | Fall of stone. | Birds Run. |
| May 22 | Jno. Conroy. | American. | 19 | Hand injured. | Mine cars. | Trail Run No. 2. |
| May 27 | Mike Berilla. | Slav. | 35 | Leg injured. | Fall of slate. | Ideal. |
| June 5 | Elmer Hill. | American. | 28 | Spine dislocated. | Fall of slate. | Hartford. |
| June 16 | Jno. Fallet. | Slav. | 30 | Four toes cut off. | Fall of slate. | Trail Run No. 1. |
| June 27 | Geo. Harner. | American. | 55 | Hand and foot injured. | Explosion of powder. | Black Top. |
| Aug. 5 | Geo. Garrin. | Slav. | 21 | Neck, shoulders and foot injured. | Fall of slate. | Murray Hill. |
| Aug. 12 | Andy Bruiza. | Pole. | 45 | Leg broken. | Fall of coal. | Imperial. |
| Aug. 27 | Lee Calvin. | American. | 42 | Ankle injured. | Loading mining machine. | Ideal. |
| Sept. 9 | Jno. Hodak. | Slav. | 33 | Foot injured. | Mining machine. | Ideal. |
| Sept. 10 | Gus Salts. | American. | 41 | Back injured. | Fall of slate. | Imperial. |
| Sept. 16 | Ray Maffatt. | American. | 17 | Leg injured. | Mine cars jumping track. | Ideal. |
| Sept. 23 | Jno. Snedlock. | American. | 17 | Left foot injured. | Mine car jumping track. | Detroit. |
| Sept. 26 | Morgan Walters. | American. | 27 | Back and stomach injured. | Falling between mine cars. | Ideal. |
| Sept. 28 | Geo. Martin. | Slav. | 35 | Leg and head injured and face cut. | Fall of slate. | Detroit. |
| Oct. 13 | Jno. Shipko. | Slav. | 21 | Hand injured. | Laying track. | Little Kate. |
| Oct. 20 | Jno. Bronsok. | Slav. | 20 | Shoulder dislocated. | Fall of slate. | Detroit. |

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|---|--|-------------------------------------|-----------------------|------------------------|------------------------|-----------------|-------------------------------|------------------|
| Nov. 13 | Nov. 18 | Dec. 3 | Dec. 5 | Dec. 8 | Dec. 9 | Dec. 11 | Dec. 15 | Dec. 18 |
| Jas. Dunning. | Martin Havalas | Jno. Polish. | Bundy Conrad. | Wm. Cross. | Mike Smith. | George Rickey. | Joe Davis. | Jno. Storky. |
| American. | Slav. | Foreigner. | American. | American. | American. | American. | American. | American. |
| 18 | 23 | 23 | 26 | 37 | 40 | 23 | 23 | |
| Breast injured. | Leg broken. | Hips and left hand injured. | Face and eye injured. | Face and hands burned. | Right leg injured. | Thumb mashed. | Right ankle and foot squeezed | Jaw bone broken. |
| Squeezed between mule and front end of car. | Fall of slate. | Squeezed between mule and mine car. | Kicked by mule. | By ignition of gas. | Run over by mine cars. | Mining machine. | Between mine cars. | Fall of stone. |
| Kings. Ideal. | Little Kate. Hartford. Puritan. Eureka. Minnehaha. Little Kate. Trail Run No. 1. | | | | | | | |

HARRISON COUNTY.

| | | | | | | | |
|--|-------------------|---------------|-----------------------------|---------------------------|--------------------|----------------|------------------------|
| Jan. 8 | Jan. 14 | Feb. 17 | Feb. 29 | Nov. 25 | Dec. 16 | Dec. 19 | Dec. 22 |
| Geo. Ranisburg. | Andy Harbaugh. | Frank Henry. | Robert Payne. | Jno. Bersean. | Leaon Cresheski. | Lewis Lovell. | Frank Borcosko. |
| American. | Polish. | American. | American. | Hungarian. | Polish. | American. | Polish. |
| 40 | 35 | 48 | 17 | 17 | 40 | 39 | 42 |
| Leg broken. | Right leg broken. | Leg broken. | Kidneys injured. | Back injured. | Toe injured. | Head injured. | Back and hips injured. |
| Fall of slate. | Fall of slate. | Fall of coal. | Caught between car and rib. | Caught by empty mine car. | Fall of soapstone. | Fall of slate. | Fall of soapstone. |
| Clover Leaf. Roby No. 1. Newton, C. & M. Majestic. Roby No. 1. Roby No. 1. Majestic. | | | | | | | |

HOCKING COUNTY.

| | | | | |
|-------------------------------|------------------------------------|-------------------|--------------------|--|
| Aug. 4 | Aug. 10 | Sept. 3 | Nov. 7 | Nov. 21 |
| F. McIntyre. | Geo. McManaway. | Jno. Howoke. | H. H. Wolf. | Sam Campbell. |
| American. | American. | Hungarian. | American. | American. |
| 34 | 45 | 27 | 65 | 45 |
| Back injured. | Right foot cut off. | Back injured. | Two ribs broken. | Foot injured. |
| Riding on front end of motor. | Caught in chain of mining machine. | Fall of roof. | Fall of drawslate. | Caught by piece of slate and thrown against car. |
| New Pitts. No. 7. | New Pitts. No. 7. | New Pitts. No. 7. | New Pitts. No. 7. | No. 207. |

LIST OF SERIOUS ACCIDENTS—Continued—JACKSON COUNTY.

| Date. | Name. | Nationality | Age. | Character of Injury. | Cause of Accident. | Name of Mine. |
|----------|-------------------|-------------|------|------------------------|-------------------------------------|----------------------|
| Jan. 28 | Chas. Seifert. | American. | 22 | Head injured. | Kicked by mule. | Superior No. 3. |
| Feb. 7 | Peter Ramsey. | American. | 21 | Head crushed. | By flying slate. | Superior No. 9. |
| Feb. 8 | Wm. Morgan. | American. | 22 | Hip injured. | Caught between mine car and rib | Jones & Morgan No. 3 |
| Feb. 17 | Orland Grover. | American. | 24 | Face and neck injured. | Explosion of powder. | Cochran. |
| Feb. 25 | Harry Sines. | American. | 19 | Head injured. | Kicked by mule. | Tom Corwin. |
| March 8 | Jas. Duane. | American. | 47 | Left foot injured. | Fall of slate. | Superior No. 8. |
| March 24 | Jno. Alishre. | American. | 36 | Foot injured. | Mine car jumping track. | Superior No. 10. |
| April 9 | Patrick Haythe. | American. | 26 | Leg broken. | Fall of slate. | Star. |
| June 16 | Wm. Weston. | American. | 40 | Back and hips injured. | Fall of slate. | Price. |
| Aug. 14 | Tom Lewis. | American. | 42 | Hip injured. | Fall of slate. | Sun. |
| Sept. 10 | Thos. Buckley. | American. | 20 | Back injured. | Caught between water tank and roof. | Superior No. 12. |
| Sept. 19 | J. Russell Smith. | American. | 57 | Hips injured. | Fall of slate. | Davis, F. B. |
| Nov. 4 | Cleve Bennett. | American. | 25 | Back injured. | Fall of slate. | Sun. |
| Dec. 14 | Joe Bartels. | American. | 50 | Ribs fractured. | Premature explosion of powder | |
| Dec. 23 | Jno. James. | American. | 21 | Right arm broken. | from faulty squib. | Sun. |
| | | | | | Car jumping track. | Superior No. 3. |

JEFFERSON COUNTY.

| | | | | | | |
|----------|--------------------|-----------|----|---|---------------------------------|------------------|
| Jan. 2 | Joe Gracocobi. | Italian. | 42 | Left leg fractured. | Fall of roof. | Jefferson. |
| Jan. 21 | Joe Sigman. | Hungarian | 31 | Third and fourth fingers broken. | Placing skid under mining mach. | Ramsey. |
| Jan. 21 | Jos. Misco. | Slav. | 35 | Leg injured. | Fall of coal. | Zerbe. |
| Jan. 25 | Jno. Gordon. | Polish. | 17 | Three fingers injured, and small one fractured. | Mine cars. | Jefferson. |
| Feb. 7 | Emile Servion. | French. | 22 | Right leg sprained. | Caught by mine car and post. | Jefferson. |
| Feb. 27 | Frank Blasbeck. | Polish. | 24 | Back broken. | Fall of stone. | Rush Run No. 3. |
| March 11 | Geo. Zone. | Slav. | 18 | Left leg injured. | Run over by mine cars. | Plum Run. |
| March 13 | Arsuria Grpolotti. | Italian. | 24 | Right leg fractured. | Fall of roof. | Jefferson No. 2. |
| March 14 | Dominik Muffe. | American. | 25 | Little finger mashed. | Mining machine. | Jefferson No. 1. |

| March 14 | Chas. McGibbs. | American. | 32 | Threw ribs broken. | Caught between machine and pillar. | Zerbe, Jefferson No. 3. |
|----------|------------------|-----------|----|--------------------------------------|--|-------------------------|
| March 17 | Jno. Weston. | Hungarian | 24 | Left hand injured. | Jumping in front of motor trip. | Jefferson No. 2. |
| March 21 | Joe Weney. | Slav. | 20 | Head and face cut. | Fall of stone. | |
| March 24 | L. E. Hutchison. | American. | 21 | Leg broken. | Caught by mine car and 3x4 wire support. | Kelley No. 2. |
| March 25 | Joe Dermelle. | Russian. | 37 | Leg broken. | Fall of stone. | Walnut Hill No. 2. |
| March 27 | Anton Karkar. | Hungarian | 55 | Hips injured. | Caught between mine car and door. | Dillon No. 2. |
| March 27 | Lukie Dyook. | Russian. | 26 | Hips injured and two fingers mashed. | Mine cars. | Jefferson No. 1. |
| March 31 | Steve Chapore. | Hungarian | 38 | Legs broken. | Fall of stone. | Dillon No. 2. |
| April 24 | Jake Wick. | American. | 29 | Back injured. | Fall of slate. | X. L. |
| April 28 | Anton Beaswarm. | Hungarian | 24 | Leg broken. | Caught between car and tail chain. | Wabash. |
| May 28 | Jno. Noelle. | Pole. | 21 | Right leg broken. | Fall of stone. | Plum Run. |
| May 13 | Jacob Wrynitsko. | Pole. | 30 | Abdomen injured. | Fall of slate. | Goucher. |
| May 16 | Jno. Harvas. | Hungarian | 24 | Foot injured. | Mining machine. | Dillon No. 2. |
| May 21 | Mike Obsarmy. | Pole. | 22 | Leg broken. | Fall of stone. | Walnut Hill No. 2. |
| June 8 | Tom Pashanda. | Hungarian | 44 | Legs broken. | Fall of stone. | Connor. |
| June 16 | Tony Campuna. | Italian. | 30 | Leg broken. | Fall of slate. | Jefferson No. 1. |
| June 19 | Wm. Hardy. | American. | 21 | Collar bone broken. | Empty cars. | LaGrange. |
| July 10 | Chas. Schornick. | Slav. | 35 | Back injured. | Fall of slate. | Elizabeth. |
| July 16 | Jno. Bess. | American. | 29 | Thumb injured. | Mine cars. | Walnut Hill No. 2. |
| July 16 | Jno. Moraski. | Austrian. | 38 | Back injured. | Fall of stone. | Glen. |
| July 22 | Frank Bodnar. | Hungarian | 38 | Back injured. | Fall of roof. | Dillon No. 2. |
| July 22 | Geo. Conn. | American. | 20 | Face and body burned. | Blown out shot. | American S. P. |
| July 28 | Tony Ruget. | Pole. | 23 | Finger injured. | Caught between mine car and roof. | Jefferson No. 2. |
| July 31 | Steve Gerbish. | Slav. | 27 | Back and hips injured. | Fall of roof. | Portland. |
| Aug. 10 | R. E. Roush. | American. | 31 | Face burned. | Explosion of gas. | Eastern Ohio. |
| Aug. 11 | Seymour Steely. | American. | 45 | Face and hands burned. | Explosion of gas. | Eastern Ohio. |
| Aug. 11 | Joe Goul. | Hungarian | 22 | Right leg broken. | Caught between mine car and rib. | Plum Run. |
| Aug. 12 | Frank Kucen. | Bohemian. | 61 | Leg broken. | Fall of soapstone. | Edgar No. 2. |
| Aug. 18 | Bryan Vowak. | Slav. | 25 | Back injured. | Run over by mine cars. | Amsterdam. |
| Aug. 18 | Paolo Rockitti. | Italian. | 19 | Leg broken. | Caught between car and coal. | Crow Hollow. |
| Aug. 19 | Joe Berri. | Hungarian | 20 | Leg broken in two places. | Fall of drawslate. | Connor No. 1. |
| Aug. 28 | Chas. Duke. | American. | 24 | Foot injured. | Mining machine. | Walnut Hill No. 2. |
| Aug. 28 | Lewis Prazza. | Italian. | 28 | Collar bone broken. | Mine cars jumping track. | Jefferson No. 1. |
| Aug. 28 | Dave Pemberton. | Pole. | 28 | Head, face and leg lacerated. | Mine cars jumping track. | Jefferson No. 1. |

LIST OF SERIOUS ACCIDENTS—Continued—JEFFERSON COUNTY—Concluded.

| Date. | Name. | Nationality | Age. | Character of Injury. | Cause of Accident. | Name of Mine. |
|------------------|-----------------------|-------------|------|---------------------------------------|---|--------------------|
| Sept. 2 | Joe Francus..... | Italian.... | 38 | Ankle bruised..... | Fall of soapstone..... | Rush Run No. 3. |
| Sept. 3 | Geo. Gieski..... | Italian.... | 26 | Leg injured..... | Mining machine..... | High shaft. |
| Sept. 12 | Robert Patterson..... | American.. | 53 | Finger injured..... | By lump of coal..... | Walnut Hill No. 2. |
| Sept. 12 | Jno. Kolis..... | French.... | 35 | Arm injured..... | Mine cars..... | Goucher. |
| Sept. 21 | Geo. Galan..... | Polish.... | 32 | Arm cut and hip bruised..... | Fall of top coal..... | Jefferson No. 1. |
| Oct. 1 | Frank Francisca..... | Italian.... | 22 | Wrist broken..... | Caught between roof and mine car..... | Jefferson No. 2. |
| Oct. 9 | Tony Crutilo..... | Polish.... | 27 | Finger cut off..... | Mining machine..... | Walnut Hill No. 1. |
| Nov. 11 | Leo Urbanskic..... | Polish.... | 23 | Hip crushed..... | Mine car leaving track..... | Plum Run No. 1. |
| Nov. 17 | Adam Gorrie..... | American.. | 29 | Back injured..... | Coupling lower platform on track, car jumped..... | Edgar No. 1. |
| Nov. 17 | Jas. Carpenter..... | American.. | 36 | Arm broken..... | Lifting mining machine with jack | Rush Run No. 1. |
| Nov. 20 | Joe Guageli..... | Italian.... | 45 | Leg, arm and shoulder dislocated..... | Fall of stone..... | Connor. |
| Nov. 20 | Theo. Rocca..... | Italian.... | 22 | Both legs broken..... | Fall of roof coal on main entry..... | Jefferson No. 1. |
| Nov. 28 | Steve Foldi..... | Slav..... | 35 | Tight thigh broken..... | Fall of roof..... | Elizabeth. |
| Dec. 7 | Princeo Telamina..... | Italian.... | 18 | Leader in foot burst..... | Fall of roof..... | W. & L. E. No. 2. |
| Dec. 9 | Mike Kest..... | Hungarian.. | 56 | Head and foot injured..... | Fall of drawlatch..... | Rush Run No. 1. |
| Dec. 11 | Oscar Davies..... | Italian.... | 41 | Head, face and hip injured..... | Explosion of powder in motor trip..... | Jefferson No. 1. |
| Dec. 11 | Lawrence George..... | Hungarian.. | 19 | Right leg broken..... | Fall of stone..... | Connor No. 2. |
| Dec. 17 | Chas. Pratt..... | American.. | 45 | Knee dislocated..... | Placing mine car on track..... | Kelley. |
| Dec. 17 | Brownie Canculo..... | Polish.... | 18 | Thigh bone broken..... | Loaded mine car..... | Plum Run No. 1. |
| Dec. 28 | Homer Vickers..... | American.. | 23 | Finger injured..... | Ran over by mine cars..... | Jefferson No. 2. |
| Dec. 29 | Wm. Beal..... | American.. | 28 | Finger injured..... | Coupling mine cars..... | U. S. |
| Dec. 31 | Sherman Roach..... | American.. | 19 | Ankle injured..... | Caught by mine cars..... | Walnut Hill No. 2. |
| LAWRENCE COUNTY. | | | | | | |
| Jan. 21 | Wilber Hall..... | American.. | 50 | Back and ribs injured..... | Premature explosion..... | Kelley. |
| July 16 | Joe Brown..... | American.. | 42 | Leg injured..... | Fall of coal..... | Frog No. 3. |

| Dec. | 6 | Geo. Myers. | American. | 20 | Ankle sprained. | Fall of roof. | Halley No. 3. |
|-------------------|----|------------------|-----------|----|-------------------------------|--------------------------------------|--------------------|
| MEIGS COUNTY. | | | | | | | |
| Feb. | 28 | Jno. Hunn. | American. | 56 | Leg injured. | Fall of drawslate. | Salisbury. |
| Nov. | 18 | Henry Bryan. | American. | 48 | Foot crushed. | Fall of drawslate. | Rutland. |
| Nov. | 20 | Geo. Heimis. | American. | 20 | Left arm dislocated. | Caught between mule and mine car. | Rolling Mill. |
| Nov. | 27 | Howard Arnold. | American. | 26 | Foot injured. | Caught between car bumpers. | Rolling Mill. |
| MORGAN COUNTY. | | | | | | | |
| Feb. | 8 | Jas. Duffy. | American. | 24 | Leg injured. | Mine cars. | Rose. |
| March | 16 | Mike Justus. | American. | 24 | Hips and leg injured. | Caught between car and trap door. | Tropic. |
| March | 18 | Henry Strohl. | American. | 24 | Back, ankle and face injured. | Fall of bone coal. | Tropic. |
| Sept. | 17 | Chas. Schneider. | American. | 28 | Wrist injured. | Water box. | Rose. |
| Oct. | 2 | Naamin Matheny. | American. | 35 | Leg broken. | Collision of mine car and water box. | Tropic. |
| Nov. | 9 | Hugh Rac. | American. | 28 | Arm broken. | Fall of bone coal. | Tropic. |
| Dec. | 10 | Jno. Julius. | Pole. | 32 | Nose broken. | Fall of drawslate. | Tropic. |
| Dec. | 15 | Lewis Hamilton. | American. | 39 | Face, head and back injured. | Fall of bone coal. | Rose. |
| Dec. | 22 | Hugh Parker. | American. | 15 | Leg broken. | Struck by mine car. | Tropic. |
| MUSKINGUM COUNTY. | | | | | | | |
| Jan. | 6 | Earl Canole. | American. | 21 | Face injured. | Fall of bone coal. | Muskingum C. & Ry. |
| July | 8 | Mart Stewart. | American. | 19 | Right leg injured. | Caught between mine cars. | No. 38. |
| July | 11 | Wm. Hysell. | American. | 47 | Leg sprained. | Fall of bone coal. | Maynard No. 38. |
| Aug. | 6 | Shelley Anders. | Italian. | 21 | Foot injured. | Mine car jumping track. | Fan American. |
| Aug. | 13 | Lewis Krier. | American. | 42 | Back and ankle injured. | Fall of coal. | Cadillac. |

LIST OF SERIOUS ACCIDENTS—Continued—PERRY COUNTY—Concluded.

| Date. | Name. | Nationality | Age. | Character of Injury. | Cause of Accident. | Name of Mine. |
|----------|------------------|-------------|------|------------------------------|--|--------------------|
| Aug. 1 | E. W. Stephenson | American. | 43 | Foot bone broken | Fall of top coal | Jones No. 16. |
| Aug. 5 | Chas. S. Essex | American. | 34 | Four ribs broken | Fall of top coal | Essex No. 37. |
| Aug. 8 | Geo. Finley | American. | 53 | Ribs fractured | Fall of slate | Twentieth Century. |
| Sept. 19 | Robert Moody | American. | 28 | Spine injured | Fall slate. | No. 268. |
| Sept. 24 | Sanford Bolin | American. | 26 | Three fingers taken off. | Caught between car and motor. | Chapman No. 1. |
| Sept. 30 | Elmer Hartley | American. | 28 | Ankle injured | Fall of slate | Bear Run No. 1. |
| Oct. 5 | Fred Huffman | American. | 58 | Leg broken | Fall of coal. | Dixie. |
| Oct. 5 | Lewis Owrey | American. | 28 | Bone in left leg fractured | Collision of mine cars | Pedlow. |
| Oct. 12 | Fred Lazarus | American. | 22 | Rib broken and spine injured | Fall of roof. | Congo. |
| Oct. 13 | W. R. James | American. | 35 | Hips crushed | Fall of slate | XX No. 3. |
| Oct. 13 | Wm. R. Davis | American. | 23 | Left leg broken | Fall of slate | XX No. 3. |
| Nov. 7 | Jno. Maher | American. | 50 | Foot bone crushed | Fall of slate | Bear Run No. 1. |
| Nov. 15 | Richard Searls | American. | 47 | Eye struck | By piece of coal, causing loss of eye. | No. 321. |
| Nov. 20 | Elmer Knight | American. | 23 | Foot run over | By mine car | Keystone No. 2. |
| Nov. 24 | Cash Romaine | American. | 24 | Right leg injured | Riding on mine car. | Dixie. |
| Dec. 26 | Daniel Stanch | Rouman'n | 19 | Rib broken. | Fall of slate | Greeley. |

PORTAGE COUNTY.

| | | | | | | |
|----------|---------------|-----------|----|--------------|---------------------------------|---------------|
| Jan. 30 | Albert Leek | American. | 23 | Foot injured | Caught in mining machine. | Hutson No. 4. |
| Aug. 20 | Miles Jenkins | American. | 22 | Hand injured | Caught between mine car and rib | Mullins. |
| Sept. 12 | Miles Jenkins | American. | 22 | Hand injured | Car jumping track. | Mullins. |
| Sept. 28 | Rees Edwards | American. | 59 | Leg broken. | Fall of slate | Hutson No. 4. |

SCIOTO COUNTY.

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|--------|--------------|-----------|----|--------------|-----------------------------|-------------|
| Aug. 4 | Wm. Lam, Jr. | American. | 22 | Face burned. | Explosion of keg of powder. | Sugar Camp. |
|--------|--------------|-----------|----|--------------|-----------------------------|-------------|

LIST OF SERIOUS ACCIDENTS—Continued—STARK COUNTY.

| Date. | Name. | Nationality | Age. | Character of Injury. | Cause of Accident. | Name of Mine. |
|----------|-------------------|-------------|------|-----------------------------|--------------------------------|---------------------|
| Jan. 7 | Albert Young. | American. | 27 | Leg broken. | Caught between mine car & door | Whittacre F. P. Co. |
| Jan. 9 | Michael Obright. | French. | 58 | Arm and foot injured | Fall of slate | Taggart. |
| Jan. 10 | Jno. Wascois. | American. | 41 | Leg fractured. | Fall of slate | Indian Run. |
| Jan. 16 | Chas. Rudebaugh. | American. | 27 | Left finger taken off | Spragging mine cars | Whittacre F. P. Co |
| Feb. 3 | Wm. Fairless. | American. | 49 | Ribs broken | Fall of slate | No. 19. |
| Feb. 7 | Joe Londean. | Italian. | 26 | Ligament cut in left knee | Fall slate falling on machine. | M. C. M. No. 12. |
| Feb. 8 | Emanuel Sinitz | American. | 38 | Right side and hip injured. | Caught between mine cars | M. C. M. No. 12. |
| March 15 | J. Hodgins | American. | 25 | Head injured | Fall of slate | Taggart. |
| Sept. 15 | Edward Latze. | American. | 22 | Hand cut | Fall top coal | Sunnyside. |
| Sept. 24 | Wm. Booth | American. | 52 | Back and right leg injured. | Fall of stone | No. 3. |
| Oct. 8 | M. C. Thomas, Jr. | American. | 42 | Head injured | Steam pipe bursting | Massillon Crystal. |
| Oct. 15 | Jno. Wilhelm. | American. | 31 | Leg injured | Tamping needle. | Taggart No. 3. |
| Oct. 27 | Jno. Seimetz. | American. | 35 | Leg injured. | Scalded by boiler water | Taggart No. 2. |
| Nov. 2 | Frank Bower. | American. | 49 | Leg broken. | Fall of coal. | Taggart No. 2. |
| Nov. 8 | Jno. Miller. | American. | 48 | Head struck | Unloading mine props | No. 17. |
| Nov. 13 | Jno. McCarty. | American. | 48 | Ankle injured | Fall of slate | No. 19. |
| Dec. 1 | Corwin Reese. | American. | 23 | Left thumb cut off | Spragging mine cars | No. 12. |
| Dec. 31 | Geo. Farnsch. | American. | 55 | Head and breast injured | Fall of stone | Smith. |

TUSCARAWAS COUNTY.

| | | | | | | |
|----------|--------------------|-----------|----|------------------------------------|---|------------------|
| Jan. 22 | Jesse Meitzer. | American. | 38 | Face, arm and legs injured | Explosion of powder | W. Goshen. |
| Jan. 30 | Geo. Gentz. | American. | 28 | Left hand, second finger inj. | Coupling mine cars | W. Goshen. |
| March 14 | Geo. Gentz. | American. | 28 | Leg and hip injured | Iron rail striking him | W. Goshen. |
| March 25 | Raymond Pimcheon | American. | 19 | Leg broken. | Caught between mine car & door | Peacock. |
| March 27 | Sam Metts. | Italian. | 25 | Collar bone broken, and thumb cut. | Fall of coal. | E. Goshen No. 2. |
| April 25 | Edward R. Jones | American. | 27 | Collar bone broken | Riding between cars; caught between roof and car. | Acme. |
| June 2 | Chas. Bates. | American. | 58 | Four fingers torn off | Cleaning pump. | Somerdale No. 1. |
| June 25 | Jno. H. Garabraut. | American. | 44 | Scalp wounds and nose broken | Fall of rock. | No. 5. |

| | | | | | | |
|---------|-----------------------|--------------|----|--|---------------------------------|-----------------------|
| July 6 | Geo. McCoy..... | American. | 47 | Leg broken..... | Fall of roof..... | Midvale Goshen. |
| July 27 | Mike Batchlso..... | Slav..... | 25 | Head and chest injured..... | Premature explosion..... | Beaver Dam No. 1 |
| Aug. 2 | Chas. McCartney..... | American. | 28 | Foot injured..... | Caught between cars..... | Goshen |
| Aug. 3 | Beser Magmana..... | Italian..... | 19 | Hand, leg and body injured..... | Premature explosion..... | Beaver Dam. |
| Aug. 8 | Peter Salara..... | Italian..... | 37 | Foot injured..... | Fall of slate..... | East Goshen. |
| Aug. 18 | Emanuel Mathias..... | American. | 28 | Right leg broken..... | Run over by mine car..... | W. Goshen. |
| Aug. 18 | Joe Batchlso..... | Hungarian | 20 | Left ankle broken and knee dislocated..... | | |
| Aug. 28 | Jno. Davis..... | American. | 52 | Leg broken..... | Fall of coal..... | Beaver Dam No. 1. |
| Oct. 1 | Tony Price..... | American. | 19 | Leg injured and amputated..... | Premature explosion powder..... | Huff Run No. 1. |
| Oct. 23 | J. W. Rosenbarry..... | American. | 55 | Right leg fractured..... | Falling under mine car..... | E. Goshen No. 2. |
| Oct. 28 | Carned Vanhara..... | American. | 30 | Back broken..... | Run over by mine cars..... | Central. |
| Nov. 11 | Wm. Harris..... | American. | 55 | Back and arms injured..... | Fall of slate..... | Mullin No. 1. |
| Nov. 11 | Angelo Risozzi..... | Italian..... | 23 | Left arm & forefinger crushed..... | Fall of rock..... | Beaver Dam No. 1. |
| Dec. 29 | Wm. Richards..... | American. | 21 | Hip and head injured..... | Fall of coal..... | Midvale Goshen No. 5. |
| | | | | | Fall of rock..... | Veleny No. 5. |

VINTON COUNTY.

| | | | | | | |
|---------|--------------------|-----------|----|-------------------------------|-------------------------|------------|
| June 5 | Pirl Eberts..... | American. | 18 | Leg injured..... | Caught by mine car..... | Alma Coal. |
| June 20 | Wm. Petty..... | American. | 35 | Flesh wounds..... | Fall of coal..... | Alma Coal. |
| July 6 | Alfe McDaniel..... | American. | 38 | Head, back and right leg inj. | Fall of shale..... | Alma Coal. |

WAYNE COUNTY.

| | | | | | | |
|----------|--------------------|--------------|----|-----------------------|---------------------------|-------------------|
| Jan. 20 | Wm. Hall..... | English..... | 45 | Right leg broken..... | Fall of coal..... | Dalton No. 14. |
| May 21 | Harry William..... | Welsh..... | 63 | Arm broken..... | Fall of stone..... | Jones Coal Co. |
| Sept. 16 | Henry Shmna..... | Welsh..... | 39 | Foot injured..... | Run over by mine car..... | W. Lebanon No. 2. |

LIST OF SERIOUS ACCIDENTS—Concluded—GYPSUM MINES OF OTTAWA COUNTY.

| Date. | Name. | Nationality | Age. | Character of Injury. | Cause of Accident. | Name of Mine. |
|----------|--------------------|-------------|------|---------------------------|---------------------------|------------------|
| March 19 | Paul Yubase..... | Hungarian | 31 | Leg broken..... | Fall of rock plaster..... | East Mine. |
| Sept. 10 | F. Amielski..... | Polish..... | 25 | Finger injured..... | Caught in gear..... | Amer. Gypsum Co. |
| Dec. 22 | Jno. Kronkosh..... | Slav..... | .. | Side and leg injured..... | Fall of slate..... | Amer. Gypsum Co. |

IMPROVEMENTS

TABLE SHOWING THE NUMBER AND CHARACTER OF THE PERMANENT IMPROVEMENTS MADE IN THE MINES OF THE STATE FROM JANUARY 1, 1908, TO DECEMBER 31, 1908, INCLUSIVE.

| Inspectors. | Furnaces. | Fans. | Air Shafts. | Second Openings. | Safety Catches. | Stairways. | Speaking Tubes. | Ventilating Baskets. | Total. |
|-----------------------|-----------|-------|-------------|------------------|-----------------|------------|-----------------|----------------------|--------|
| Thos. Waters..... | 4 | 4 | ..... | 2 | ..... | ..... | 1 | 1 | 12 |
| Edw. Kennedy..... | 8 | 3 | ..... | 11 | 2 | ..... | ..... | 2 | 26 |
| Jno. L. McDonald..... | ..... | 3 | 4 | 1 | 5 | 2 | 3 | ..... | 18 |
| Jas. Pritchard }..... | 5 | 19 | 11 | 15 | 5 | 4 | ..... | 2 | 61 |
| W. C. Wiper... } | | | | | | | | | |
| W. H. Turner..... | 5 | 5 | 8 | 8 | 6 | 4 | 2 | ..... | 38 |
| Alex. Smith..... | 2 | 5 | 4 | 8 | 2 | 7 | ..... | ..... | 28 |
| W. H. Miller..... | 4 | 6 | 13 | ..... | 1 | 3 | 2 | ..... | 29 |
| Lot Jenkins..... | ..... | 4 | ..... | 7 | 8 | 1 | ..... | ..... | 20 |
| Thos. Morrison..... | ..... | 9 | 3 | 13 | 3 | 4 | ..... | ..... | 32 |
| Ebenezer Jones..... | 1 | 8 | 8 | 17 | ..... | ..... | ..... | ..... | 34 |
| Totals..... | 29 | 66 | 51 | 82 | 32 | 25 | 8 | 5 | 298 |

TABLE SHOWING THE NUMBER AND CHARACTER OF THE PERMANENT IMPROVEMENTS MADE IN THE MINES OF THE STATE BY COUNTIES DURING THE YEAR OF 1908.

| Counties. | Furnaces. | Fans. | Air Shafts. | Second Openings. | Safety Catches. | Stairways. | Speaking Tubes. | Ventilating Baskets. | Total. |
|-----------------|-----------|-------|-------------|------------------|-----------------|------------|-----------------|----------------------|--------|
| Athens..... | | 3 | 4 | 1 | 5 | 2 | 3 | | 18 |
| Belmont..... | 1 | 8 | 2 | 13 | 8 | 1 | | | 33 |
| Carroll..... | | 2 | 1 | 5 | | 1 | | | 9 |
| Columbiana..... | 1 | 2 | 2 | 4 | 2 | 4 | | | 15 |
| Coshocton..... | 2 | | 3 | 3 | | 1 | | | 9 |
| Gallia..... | 1 | | | | | | | | 1 |
| Guernsey..... | | 3 | 3 | 5 | 4 | 4 | 1 | | 20 |
| Harrison..... | | | 2 | | | 2 | | | 4 |
| Hocking..... | 3 | 4 | | 5 | | | | 1 | 13 |
| Jackson..... | | 1 | | 1 | | | 1 | 1 | 4 |
| Jefferson..... | 1 | 11 | 6 | 17 | 3 | | | | 38 |
| Lawrence..... | 4 | 1 | | 1 | | | | | 6 |
| Mahoning..... | | 1 | 1 | | | | | | 2 |
| Medina..... | | | 2 | | | | | | 2 |
| Meigs..... | 3 | | | 4 | 2 | | | | 9 |
| Muskingum..... | 1 | 2 | 2 | 4 | | | | | 9 |
| Noble..... | 1 | 1 | 1 | 1 | 2 | | 1 | | 7 |
| Ottawa..... | | 1 | 1 | | | | | | 2 |
| Perry..... | 4 | 16 | 9 | 11 | 5 | 4 | | 2 | 51 |
| Portage..... | | 2 | 1 | | | 1 | 1 | | 5 |
| Stark..... | 4 | | 7 | | 1 | 1 | 1 | | 14 |
| Summit..... | | 1 | 1 | | | 1 | | | 3 |
| Tuscarawas..... | 2 | 4 | 3 | 5 | | 3 | | | 17 |
| Vinton..... | 1 | 2 | | 2 | | | | 1 | 6 |
| Wayne..... | | 1 | | | | | | | 1 |
| Total..... | 29 | 66 | 51 | 82 | 32 | 25 | 8 | 5 | 298 |

TABLE SHOWING THE NUMBER AND CHARACTER OF PERMANENT IMPROVEMENTS MADE IN THE MINES OF THE STATE FROM 1884 TO 1908, INCLUSIVE.

| Years. | Furnaces. | Fans. | Air Shafts. | Second Openings. | Safety Catches. | Stairways. | Speaking Tubes. | Ventilating Baskets. | Totals. |
|--------|-----------|-------|-------------|------------------|-----------------|------------|-----------------|----------------------|---------|
| 1884 | 43 | 10 | 45 | 10 | 13 | 12 | 3 | 5 | 53 |
| 1885 | 45 | 19 | 45 | 22 | 13 | 12 | 3 | 5 | 122 |
| 1886 | 13 | 6 | 22 | 10 | 7 | 8 | 3 | 5 | 63 |
| 1887 | 39 | 9 | 50 | 7 | 13 | 12 | 3 | 5 | 113 |
| 1888 | 43 | 4 | 52 | 17 | 13 | 12 | 3 | 5 | 141 |
| 1889 | 42 | 13 | 57 | 21 | 7 | 3 | 3 | 5 | 146 |
| 1890 | 57 | 20 | 66 | 46 | 8 | 11 | 4 | 5 | 212 |
| 1891 | 53 | 17 | 55 | 26 | 19 | 19 | 5 | 5 | 194 |
| 1892 | 37 | 26 | 65 | 27 | 13 | 7 | 4 | 2 | 181 |
| 1893 | 77 | 35 | 131 | 67 | 16 | 19 | 5 | 4 | 354 |
| 1894 | 55 | 18 | 106 | 60 | 7 | 11 | 3 | 9 | 269 |
| 1895 | 66 | 17 | 105 | 60 | 9 | 11 | 3 | 13 | 284 |
| 1896 | 56 | 21 | 93 | 81 | 5 | 7 | 3 | 14 | 280 |
| 1897 | 40 | 22 | 75 | 44 | 4 | 7 | 3 | 9 | 204 |
| 1898 | 44 | 17 | 73 | 45 | 7 | 11 | 1 | 15 | 213 |
| 1899 | 36 | 25 | 60 | 45 | 11 | 13 | 7 | 3 | 200 |
| 1900 | 24 | 27 | 69 | 31 | 1 | 9 | 1 | 8 | 170 |
| 1901 | 40 | 45 | 66 | 31 | 11 | 5 | 7 | 3 | 208 |
| 1902 | 50 | 59 | 98 | 37 | 21 | 20 | 10 | 8 | 303 |
| 1903 | 56 | 71 | 94 | 49 | 17 | 19 | 10 | 9 | 325 |
| 1904 | 31 | 54 | 63 | 55 | 21 | 18 | 12 | 3 | 257 |
| 1905 | 22 | 55 | 32 | 121 | 12 | 42 | 6 | 5 | 290 |
| 1906 | 26 | 48 | 37 | 80 | 24 | 23 | 3 | 4 | 245 |
| 1907 | 28 | 61 | 34 | 91 | 35 | 22 | 15 | 4 | 290 |
| 1908 | 29 | 66 | 51 | 82 | 32 | 25 | 8 | 5 | 298 |
| Totals | 1,052 | 765 | 1,599 | 1,133 | 306 | 334 | 113 | 113 | 5,415 |

WEIGH SCALES

TABLE SHOWING TOTAL NUMBER AND KIND OF SCALES TESTED IN EACH COUNTY, ALSO NUMBER FOUND CORRECT AND NUMBER FOUND INCORRECT.

| Counties. | Railroad. | | Platform. | | Hopper. | | Total. |
|------------------|-----------|------------|-----------|------------|----------|------------|--------|
| | Correct. | Incorrect. | Correct. | Incorrect. | Correct. | Incorrect. | |
| Athens | 5 | 1 | | | | | 6 |
| Belmont | 1 | | | | 14 | 2 | 17 |
| Carroll | | | | | 1 | | 1 |
| Coshocton | | | | | 4 | | 4 |
| Columbiana | | | 3 | 1 | 3 | | 7 |
| Guernsey | | | | | 4 | 1 | 5 |
| Harrison | | | | | 1 | | 1 |
| Jackson | | | | | 1 | | 1 |
| Jefferson | | | | | 1 | | 1 |
| Lawrence | | | | | 1 | | 1 |
| Muskingum | | | | | 2 | 1 | 3 |
| Perry | | | 1 | | 1 | | 2 |
| Stark | | | 1 | | 6 | 1 | 8 |
| Summit | | | | | 1 | | 1 |
| Tuscarawas | 2 | | | | 4 | 1 | 7 |
| Vinton | | | | | | 1 | 1 |
| Wayne | | | | | 3 | | 3 |
| Total | 8 | 1 | 5 | 1 | 47 | 7 | 69 |

Total number railroad scales tested 9
 Per cent. found correct 89%
 Per cent. found incorrect 11%
 Total number platform scales tested 6
 Per cent. found correct 83%
 Per cent. found incorrect 17%
 Total number hopper scales tested 54
 Per cent. found correct 87%
 Per cent. found incorrect 13%
 Per cent. found correct of total number tested 87%
 Per cent. found incorrect of total number tested 13%

TABLE SHOWING THE NUMBER OF SCALES TESTED, AND RESULT OF THE EXAMINATION FROM 1887 TO DECEMBER 31, 1908, INCLUSIVE.

| Years. | Number of Sets of Scales Tested. | Number of Sets Found Correct. | Number of Sets Found Incorrect. |
|--------|----------------------------------|-------------------------------|---------------------------------|
| 1888 | 55 | 41 | 14 |
| 1889 | 48 | 33 | 15 |
| 1890 | 59 | 46 | 13 |
| 1891 | 61 | 37 | 24 |
| 1892 | 86 | 62 | 24 |
| 1893 | 120 | 81 | 39 |
| 1894 | 64 | 37 | 27 |
| 1895 | 96 | 65 | 31 |
| 1896 | 93 | 65 | 28 |
| 1897 | 77 | 59 | 18 |
| 1898 | 99 | 82 | 17 |
| 1899 | 112 | 93 | 19 |
| 1900 | 131 | 115 | 16 |
| 1901 | 139 | 115 | 24 |
| 1902 | 154 | 131 | 23 |
| 1903 | 188 | 157 | 31 |
| 1904 | 230 | 208 | 22 |
| 1905 | 225 | 205 | 20 |
| 1906 | 163 | 150 | 13 |
| 1907 | 149 | 131 | 18 |
| 1908 | 69 | 60 | 9 |
| Totals | 2,418 | 1,973 | 445 |

TABLE SHOWING TOTAL NUMBER
EACH COUNTY, AND
FOUND INCORPORATED

1860

Athens
Belmont
Carroll
Cass
Cecil
Coke
Crawford
Harrison
Jefferson
Lincoln
Madison
Marshall
Meigs
Monroe
Morgan
New Castle
North Carolina
Pamlico
Perquimans
Rockingham
Rocky Mount
Sampson
Scotland
Stanly
Swain
Tay
Tobacco
Transylvania
Union
Vance
Wake
Wayne
Yamhill

PRODUCTION OF FIRE CLAY

TABLE SHOWING THE PRODUCTION OF FIRE CLAY FOR THE YEAR 1908 AS COMPARED WITH 1907, AND THE NUMBER OF PERSONS EMPLOYED.

| Counties. | Average number days worked in 1907 on 8-hour basis. | Number of men employed in 1907. | Number of tons mined in 1907. | Average number days worked in 1908 on 8-hour basis. | Number of men employed in 1908. | Number of tons mined in 1908. | Gain in men. | Loss in men. | Gain in tons. | Loss in tons. |
|-----------------|---|---------------------------------|-------------------------------|---|---------------------------------|-------------------------------|--------------|--------------|---------------|---------------|
| Athens..... | 210 | 70 | 223,740 | 244 | 73 | 183,605 | 3 | | | 40,135 |
| Belmont..... | | | | 249 | 41 | 24,862 | 41 | | 24,862 | |
| Carroll..... | 200 | 106 | 141,050 | 241 | 106 | 163,722 | | | 22,672 | |
| Columbiana..... | 261 | 62 | 97,289 | 196 | 72 | 102,760 | 10 | | 5,471 | |
| Guernsey..... | 250 | 14 | 5,033 | 200 | 4 | 5,590 | | 10 | 557 | |
| Hocking..... | 256 | 52 | 125,501 | 182 | 51 | 109,567 | | 1 | | 16,024 |
| Holmes..... | 155 | 11 | 3,500 | 200 | 4 | 14,000 | | 7 | 10,500 | |
| Jackson..... | 189 | 23 | 13,654 | 123 | 17 | 7,921 | | 6 | | 5,133 |
| Jefferson..... | 276 | 221 | 450,112 | 255 | 173 | 335,070 | | 48 | | 115,042 |
| Lawrence..... | 242 | 121 | 49,352 | 213 | 54 | 92,282 | | 67 | 42,930 | |
| Mahoning..... | 117 | 13 | 1,840 | 190 | 27 | 4,350 | 14 | | 2,510 | |
| Muskingum..... | 149 | 27 | 29,950 | 159 | 33 | 51,504 | 6 | | 21,554 | |
| Perry..... | 140 | 112 | 95,625 | 204 | 54 | 152,347 | | 58 | 56,722 | |
| Scioto..... | 227 | 91 | 68,973 | 223 | 133 | 84,373 | 42 | | 15,400 | |
| Stark..... | 285 | 206 | 248,753 | 243 | 77 | 130,718 | | 129 | | 118,035 |
| Summit..... | 268 | 120 | 285,277 | 275 | 82 | 220,823 | | 38 | | 26,954 |
| Tuscarawas..... | 250 | 188 | 397,942 | 251 | 175 | 308,125 | | 13 | | 57,317 |
| Vinton..... | 220 | 6 | 10,095 | 230 | 6 | 10,000 | | | | 93 |
| Wayne..... | | | | 107 | 9 | 2,400 | 9 | | 2,400 | |
| Total..... | *227 | 1,443 | 2,177,174 | *229 | 1,101 | 2,004,019 | 125 | 377 | 205,578 | 378,733 |

NOTE:—

| | |
|--------------------------------------|-----------|
| Total tons produced in 1908 | 2,004,019 |
| Total tons produced in 1907 | 2,177,174 |
| Net loss | 173,155 |
| Average days 1908 | 229 |
| Average days 1907 | 227 |
| Net gain | 2 |
| Total number men employed 1908 | 1,191 |
| Total number men employed 1907 | 1,443 |
| Net loss | 252 |

TABLE SHOWING THE FIRE CLAY PRODUCTION OF THE STATE FROM
JANUARY 1, 1884, TO DECEMBER 31, 1908, INCLUSIVE.

| Years. | Output Tons. | Gain. | Loss. |
|--------|-----------------|---------|---------|
| 1884 | 168,208 | | |
| 1885 | 153,756 | | 14,452 |
| 1886 | 266,709 | 112,953 | |
| 1887 | 366,476 | 99,787 | |
| 1888 | 471,794 | 105,313 | |
| 1889 | 574,129 | 102,335 | |
| 1890 | 833,159 | 259,030 | |
| 1891 | 1,087,560 | 254,401 | |
| 1892 | 1,253,110 | 165,550 | |
| 1893 | 1,032,348 | | 220,762 |
| 1894 | 942,913 | | 89,435 |
| 1895 | 844,832 | | 97,081 |
| 1896 | 827,450 | | 17,382 |
| 1897 | 822,727 | | 4,723 |
| 1898 | 1,026,922 | 204,195 | |
| 1899 | 1,173,697 | 146,775 | |
| 1900 | 1,473,088 | 299,391 | |
| 1901 | 1,337,181 | | 135,907 |
| 1902 | 1,528,829 | 191,648 | |
| 1903 | 1,567,603 | 38,774 | |
| 1904 | 2,045,848 | 478,245 | |
| 1905 | 2,039,292 | | 6,556 |
| 1906 | 2,126,179 | 86,887 | |
| 1907 | 2,177,174 | | 50,995 |
| 1908 | 2,004,019 | | 252 |

PRODUCTION OF LIMESTONE

(195)

PRODUCTION OF LIMESTONE

(195)

TABLE SHOWING THE PRODUCTION OF LIMESTONE IN OHIO DURING THE YEAR 1908, THE NUMBER OF PERSONS SO EMPLOYED, AND AVERAGE NUMBER OF DAYS WORKED ON EIGHT-HOUR BASIS.

| Counties. | Number Days Worked. | Number Men Employed. | Number Tons 2000 Pounds Each Burned for Lime. | Number Tons 2000 Pounds Each Burned for Fluxing. | Number Cubic Feet Dimen- sion Stone. | Number Cubic Yards Ord- nary Building Stone. | Number Cubic Yards Piers and Protection. | Square Feet Flagging. | Square Feet Paving. | Lineal Feet Curbing. | Cubic Yards for Cement and Concrete. | Cubic Yards for Ballast and Macadam. |
|---------------|---------------------|----------------------|--|---|---|---|---|-----------------------|---------------------|----------------------|---|---|
| Allen..... | 176 | 144 | 1,992 | ..... | ..... | 993 | 1,279 | 200 | 80 | ..... | 10,000 | 242,459 |
| Belmont..... | 161 | 8 | 1,992 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 306 |
| Butler..... | 144 | 12 | ..... | ..... | 2,000 | 3,325 | ..... | ..... | ..... | ..... | ..... | 200 |
| Clark..... | 260 | 175 | 57,689 | 68,370 | ..... | 5,046 | 3,620 | 1,217 | ..... | 3,351 | ..... | 49,348 |
| Clermont..... | 40 | 1 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 700 |
| Clinton..... | 139 | 39 | ..... | ..... | ..... | 107 | ..... | ..... | ..... | ..... | ..... | 24,375 |
| Crawford..... | 101 | 50 | 14 | 400 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 81,700 |
| Delaware..... | 188 | 36 | 9,680 | 50 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Erie..... | 343 | 451 | 105,575 | 78,459 | 71,057 | 40,250 | 9,732 | 2,000 | ..... | ..... | ..... | 401,000 |
| Franklin..... | 235 | 436 | ..... | 232,626 | ..... | 26,486 | ..... | ..... | ..... | ..... | ..... | 331,416 |
| Green..... | 150 | 115 | 5,250 | 4,000 | 115 | 12,525 | ..... | ..... | ..... | ..... | ..... | 62,300 |
| Hamilton..... | 262 | 23 | ..... | ..... | ..... | 6,080 | ..... | ..... | ..... | ..... | ..... | 1,880 |
| Hancock..... | 127 | 73 | ..... | 4,000 | ..... | 978 | ..... | ..... | ..... | ..... | 1,886 | 83,560 |
| Hardin..... | 119 | 53 | 12,646 | ..... | ..... | 150 | ..... | ..... | ..... | ..... | ..... | 47,000 |
| Harrison..... | 13 | 10 | 520 | ..... | ..... | ..... | ..... | ..... | 300 | ..... | ..... | ..... |
| Highland..... | 136 | 112 | ..... | ..... | ..... | 2,907 | ..... | ..... | ..... | ..... | ..... | 26,070 |
| Jackson..... | 32 | 8 | 500 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Lawrence..... | 166 | 378 | 12,143 | 37,129 | ..... | ..... | ..... | 200 | ..... | ..... | 133,190 | 41,255 |
| Logan..... | 160 | 88 | ..... | ..... | ..... | 1,340 | 20 | ..... | ..... | ..... | ..... | 234,000 |
| Lucas..... | 155 | 98 | ..... | 20,220 | ..... | 995 | 4,018 | ..... | 3,250 | ..... | ..... | 103,752 |

| | | | | | | | | | | | |
|-----------------|-----|-------|---------|-----------|--------|---------|--------|--------|--------|---------|-----------|
| Marion..... | 289 | 395 | 104,474 | 92,888 | ..... | 3,356 | ..... | ..... | ..... | 1,000 | 228,310 |
| Meruer..... | 38 | 42 | 1,000 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2,800 |
| Miami..... | 257 | 116 | 8,553 | 29,311 | 450 | 5,330 | 2,000 | 600 | 2,500 | ..... | 41,750 |
| Montgomery..... | 263 | 59 | ..... | ..... | 11,750 | 8,165 | ..... | ..... | 424 | ..... | 37,721 |
| Muskingum..... | 289 | 441 | 93,995 | 873,986 | ..... | ..... | 28,787 | ..... | ..... | ..... | 125,638 |
| Ottawa..... | 290 | 118 | 66,589 | 2,633 | ..... | ..... | ..... | ..... | ..... | ..... | 12,465 |
| Paulding..... | 100 | 72 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 36,000 |
| Perry..... | 162 | 2 | ..... | 552 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Preble..... | 151 | 88 | 59,467 | 245 | 1,600 | 641 | 250 | ..... | ..... | ..... | 70,750 |
| Putnam..... | 125 | 79 | ..... | ..... | ..... | 565 | 75 | ..... | ..... | 700 | 49,223 |
| Sandusky..... | 253 | 286 | 70,243 | ..... | 12,243 | 8,760 | 100 | ..... | ..... | 47,493 | 191,523 |
| Scioto..... | 216 | 10 | ..... | 14,719 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Seneca..... | 208 | 183 | 33,860 | ..... | ..... | 3,323 | ..... | ..... | 8,000 | ..... | 115,547 |
| Stark..... | 175 | 68 | 1,340 | ..... | ..... | ..... | ..... | ..... | 60,851 | ..... | 4,067 |
| Van Wert..... | 147 | 128 | ..... | ..... | ..... | 256 | ..... | 31,995 | 14,000 | ..... | 99,175 |
| Vinton..... | 230 | 80 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 80,000 | ..... |
| Wood..... | 168 | 211 | 12,652 | ..... | ..... | 735 | ..... | ..... | ..... | ..... | 191,542 |
| Total..... | 225 | 4,678 | 658,182 | 1,459,588 | 99,100 | 132,513 | 49,881 | 4,117 | 38,125 | 357,120 | 2,937,802 |

TABLE SHOWING THE COMPARATIVE GAINS AND LOSSES IN THE VARIOUS CLASSIFICATIONS OF LIMESTONE
PRODUCTION FOR 1908, AS COMPARED WITH 1907.

| Years. | Number of Days Worked. | Number of Men Employed. | Number Tons 2,000 Pounds Each Burned for Lime. | Number Tons 2,000 Pounds Each Burned for Fluxing. | Number Cubic Feet Dimen- sion Stone. | Number Cubic Yards Ord- nary Building Stone. | Number Cubic Yards for Pier and Protection Pur- poses. | Square Feet Flagging. | Square Feet Paving. | Lineal Feet Curbing. | Cubic Yards for Cement and Concrete. | Cubic Yards for Ballast and Macadam. |
|--------------|------------------------|-------------------------|---|--|---|---|--|-----------------------|---------------------|----------------------|---|---|
| 1907..... | 249 | 5,390 | 814,726 | 2,718,820 | 92,331 | 160,468 | 96,850 | 15,069 | 31,121 | 223,382 | 401,775 | 2,805,820 |
| 1908..... | 225 | 4,678 | 658,182 | 1,459,588 | 99,100 | 132,513 | 49,881 | 4,117 | 38,125 | 6,275 | 357,120 | 2,937,802 |
| Gains ..... | ..... | ..... | ..... | ..... | 6,769 | ..... | ..... | ..... | 7,004 | ..... | ..... | 131,982 |
| Losses | 24 | 712 | 156,544 | 1,259,232 | ..... | 27,955 | 46,969 | 10,952 | ..... | 217,107 | 44,655 | ..... |

TABLE SHOWING THE COMPARATIVE PRODUCTION OF LIMESTONE IN OHIO FROM 1886 TO 1908, INCLUSIVE.

| Years. | Average Number Days Worked. | Number of Men Employed. | Number Tons of 2,000 Lime. Pounds Each Burned for | Number Tons of 2,000 Fluxing; Pounds Each Burned for | Cubic Feet of Dimension Stone. | Cubic Yards of Ordinary Building Stone. | Cubic Yards for Piers and Protection Purposes. | Square Feet of Flagging. | Square Feet of Paving. | Lineal Feet of Curbing. | Cubic Yards of Ballast and Macadam. | Cubic Yards for Cement and Concrete. |
|--------|--------------------------------------|-------------------------|---|--|-----------------------------------|--|---|--------------------------|------------------------|-------------------------|--|---|
| 1886. | 149 | 2,383 | 517,270 | 328,080 | 566,697 | 295,231 | 63,050 | 187,900 | 154,636 | 60,650 | 186,810 | ..... |
| 1887. | 182 | 2,767 | 619,027 | 478,674 | 950,393 | 385,247 | 78,932 | 350,954 | 289,195 | 139,174 | 416,018 | ..... |
| 1888. | 165 | 3,025 | 602,074 | 666,481 | 1,795,038 | ..... | 78,381 | 580,901 | 313,855 | 205,227 | 445,770 | ..... |
| 1889. | 165 | 2,631 | 849,442 | 235,298 | 898,886 | 364,685 | 69,876 | 413,400 | 586,361 | 209,339 | 354,544 | ..... |
| 1890. | 171 | 2,445 | 689,827 | 305,521 | 333,076 | 270,367 | 81,414 | 673,850 | 507,313 | 165,434 | 432,650 | ..... |
| 1891. | 143 | 3,286 | 744,946 | 284,478 | 634,901 | 361,637 | 65,295 | 417,855 | 4,948,939 | 200,756 | 622,194 | ..... |
| 1892. | 132 | 3,353 | 631,049 | 217,981 | 1,057,157 | 323,600 | 48,102 | 171,567 | 2,883,208 | 101,820 | 764,784 | ..... |
| 1893. | 149 | 2,929 | 396,690 | 108,376 | 747,712 | 290,614 | 57,374 | 226,654 | 393,883 | 209,327 | 757,142 | ..... |
| 1894. | 138 | 2,484 | 349,631 | 240,173 | 1,363,792 | 181,722 | 22,839 | 206,736 | 312,868 | 144,042 | 435,764 | ..... |
| 1895. | 127 | 3,829 | 1,175,988 | 429,632 | 500,648 | 253,900 | 48,675 | 573,634 | 640,836 | 162,873 | 650,217 | ..... |
| 1896. | 132 | 3,186 | 397,162 | 623,544 | 260,289 | 215,900 | 29,114 | 137,579 | 163,373 | 71,236 | 553,329 | ..... |
| 1897. | 131 | 3,398 | 481,871 | 320,437 | 371,741 | 248,392 | 97,548 | 145,331 | 113,025 | 55,168 | 629,044 | ..... |
| 1898. | 132 | 3,149 | 624,921 | 571,029 | 605,172 | 308,343 | 71,606 | 43,256 | 43,256 | 52,940 | 729,896 | ..... |
| 1899. | 142 | 3,165 | 626,274 | 791,701 | 405,112 | 264,640 | 87,099 | 100,133 | 81,796 | 57,091 | 864,349 | ..... |
| 1900. | 141 | 3,680 | 547,046 | 882,426 | 166,276 | 274,919 | 120,264 | 131,837 | 64,170 | 40,550 | 1,288,416 | ..... |
| 1901. | 154 | 4,135 | 554,523 | 1,419,087 | 318,995 | 304,312 | 103,784 | 103,177 | 48,512 | 37,828 | 1,551,378 | ..... |
| 1902. | 181 | 3,946 | 652,990 | 1,489,974 | 98,186 | 273,140 | 138,074 | 65,904 | 42,337 | 25,321 | 1,386,104 | ..... |
| 1903. | 167 | 3,848 | 548,068 | 1,501,038 | 106,861 | 286,683 | 88,114 | 44,330 | 204,648 | 16,726 | 1,271,687 | ..... |
| 1904. | 229 | 3,976 | 604,979 | 1,402,829 | 102,044 | 323,209 | 148,497 | 44,638 | 146,934 | 20,363 | 1,586,865 | 54,130 |
| 1905. | 245 | 4,728 | 740,203 | 2,143,001 | 937,702 | 300,368 | 77,236 | 46,398 | 36,403 | 14,769 | 2,987,166 | 237,102 |
| 1906. | 246 | 5,131 | 655,503 | 1,333,338 | 46,541 | 305,429 | 123,606 | 10,863 | 115,329 | 63,175 | 3,105,605 | 144,551 |

TABLE SHOWING THE COMPARATIVE PRODUCTION OF LIMESTONE IN OHIO FROM 1886 TO 1908, INCLUSIVE
—Concluded.

| Years. | Average Number Days Worked. | Number of Men Employed. | Number of Tons of Lime. Pounds Each Burned for | Number of Tons of 2,000 Pounds Each Burned for Fluxing. | Cubic Feet of Dimension Stone. | Cubic Yards of Ordinary Building Stone. | Cubic Yards for Piers and Protection Purposes. | Square Feet of Flagging. | Square Feet of Paving. | Lineal Feet of Curbing. | Cubic Yards of Ballast and Macadam. | Cubic Yards for Cement and Concrete. |
|----------------|--------------------------------------|-------------------------|--|---|-----------------------------------|--|---|--------------------------|------------------------|-------------------------|--|---|
| 1907..... | 249 | 5,390 | 814,726 | 2,718,820 | 92,331 | 160,468 | 96,850 | 15,069 | 31,121 | 223,382 | 2,805,820 | 401,775 |
| 1908..... | 225 | 4,678 | 658,182 | 1,459,588 | 99,100 | 132,513 | 49,881 | 4,117 | 38,125 | 6,275 | 2,937,802 | 357,120 |
| Gain over 1907 | ..... | ..... | ..... | ..... | 6,769 | ..... | ..... | ..... | 7,004 | ..... | 131,982 | ..... |
| Loss from 1907 | 24 | 712 | 156,544 | 1,259,232 | ..... | 27,955 | 46,969 | 10,952 | ..... | 217,107 | ..... | 44,655 |

PRODUCTION OF IRON ORE

TABLE SHOWING THE PRODUCTION OF IRON ORE, BY COUNTIES, DURING THE YEARS 1907 AND 1908, AND THE GAIN AND LOSS IN EACH COUNTY.

| Counties. | 1907. | 1908. | Gain. | Loss. |
|---------------|-------|-------|-------|-------|
| Jackson..... | | 20 | 20 | |
| Lawrence..... | 2,270 | 2,047 | | 223 |
| Scioto..... | 153 | 53 | | 100 |
| Total..... | 2,423 | 2,120 | 20 | 323 |

NOTE:—Net Loss, 303 tons.

TABLE SHOWING THE IRON ORE PRODUCTION OF THE STATE FROM 1884 TO 1908, INCLUSIVE.

| Years. | Blackband. | | | Hematite. | | | |
|-----------|--------------|--------|--------|--------------|---------|--------|---------|
| | Output Tons. | Loss. | Gain. | Output Tons. | Loss. | Gain. | Total. |
| 1884..... | | | | | | | 276,286 |
| 1885..... | 70,931 | | | 188,646 | | | 259,577 |
| 1886..... | 83,947 | | 13,012 | 260,537 | | 71,891 | 344,484 |
| 1887..... | 87,965 | | 4,018 | 289,500 | | 28,963 | 377,465 |
| 1888..... | 82,054 | 5,911 | | 171,298 | 118,202 | | 253,352 |
| 1889..... | 70,398 | 11,656 | | 182,011 | | 10,713 | 252,409 |
| 1890..... | 41,848 | 28,550 | | 127,240 | 54,771 | | 169,088 |
| 1891..... | 15,540 | 26,308 | | 52,444 | 74,796 | | 67,984 |
| 1892..... | 8,680 | 6,860 | | 81,042 | | 28,598 | 89,722 |
| 1893..... | 3,837 | 4,843 | | 64,423 | 16,619 | | 68,260 |
| 1894..... | | 3,837 | | 58,043 | 6,380 | | 58,043 |
| 1895..... | | | | 93,051 | | 35,008 | 93,051 |
| 1896..... | | | | 70,765 | 22,286 | | 70,765 |
| 1897..... | | | | 50,267 | 20,498 | | 50,267 |
| 1898..... | | | | 51,659 | | 1,392 | 51,659 |
| 1899..... | | | | 25,359 | 16,800 | | 25,359 |
| 1900..... | | | | 52,266 | | 26,907 | 52,266 |
| 1901..... | | | | 41,325 | 10,941 | | 41,325 |
| 1902..... | | | | 10,681 | 30,644 | | 10,681 |
| 1903..... | | | | 12,995 | | 2,314 | 12,995 |
| 1904..... | | | | 20,652 | | 7,657 | 20,652 |
| 1905..... | | | | 14,207 | 6,445 | | 14,207 |
| 1906..... | | | | 8,515 | 5,692 | | 8,515 |
| 1907..... | | | | 2,423 | 6,092 | | 2,423 |
| 1908..... | | | | 2,120 | 303 | | 2,120 |

PRODUCTION OF GYPSUM

TABLE SHOWING COMPARISON OF GYPSUM PRODUCTION OF 1908 AS COMPARED WITH THE YEAR 1907, THE NUMBER OF EMPLOYEES AND DAYS WORKED DURING THE YEAR 1908.

| Ottawa County. | Tons Produced in 1907. | Tons Produced in 1908. | Gain. | Loss. | Number of Employees in 1908. | Number of Days Worked in 1908. |
|---------------------------|------------------------|------------------------|--------|--------|------------------------------|--------------------------------|
| American Gypsum Co..... | 50,000 | 74,000 | 24,000 | ..... | 70 | 235 |
| Consumers Gypsum Co | 17,717 | ..... | ..... | 17,717 | ..... | ..... |
| U. S. Gypsum Co | 95,403 | 80,436 | ..... | 14,967 | 122 | 247 |
| Total..... | 163,120 | 154,436 | 24,000 | 32,684 | 192 | ..... |

NOTE:—

Average days worked, 243.

Average tons produced for each man for the year 1908, 804.

Average tons produced for each man per day for 1908, 3.3.

Loss in tonnage as compared with the year 1907, 8,684 tons.



PATRICK McBRYDE.

Born November 4th, 1848.

Died December 12, 1908.

PATRICK McBRYDE

The subject of this sketch, died at the North Wheeling hospital, Wheeling, W. Va., December 12, 1908.

THE genial "Pat" (the name by which he was familiarly known by all his friends and acquaintances), was born at Carrickmacross, a country town in the southeast corner of Monahan County, a few miles from the now busy town and port of Dundalk, Ireland, on November 4, 1848. The two years previous, 1846 and 1847, marked a period of great and lamentable calamity and disaster to the Irish people. As a result of the famine, caused by the almost entire failure of the potato and other crops, nearly one-fifth of the people died from sheer want during these two years, and on May 15, 1847, the spirit of the people sank beyond hope when they learned of the death of that great patriot, Daniel O'Connell, who was held so dear in the hearts of his countrymen. For many years following, desolation, misery and veritable bondage caused thousands and thousands to leave the country; amongst others was the family of McBryde, who located in Scotland, and when very young, "Pat" found his lot cast with that of the Scotch coal miners, near Glasgow.

Mr. McBryde was fortunate in receiving a better common school education than the general run of boys of his time. In religion, he was a devout Catholic, and the writer has been informed that by his own energy and perseverance, he acquired much of his education at the Catholic night and Sabbath schools. Like all notable Irish characters, he had a bitter hatred for the oppressor, and a warm heart and deep sympathy for the oppressed, and he soon became interested in the cause of the Scotch miners.

Under the able leadership of that great and noble friend of the miners, Alexander McDonald, member of parliament, and other leaders of the same school, Mr. McBryde learned the pure, self-sacrificing, fundamental principles, and was taught the first lessons in trade unionism. He was always active and energetic in support of any and every movement looking to the amelioration of the condition of his craftsmen.

Coming to America in 1877, he worked as a miner in the anthracite region and other parts of Pennsylvania, for four years, the death of his mother causing his return to Scotland in 1881. He spent about two years as superintendent of tunnel work in Ireland, the balance of the time in the mines in England and Scotland, and returned to this country with his two young sons in the spring of 1885, locating at Shire Oaks, Pennsylvania, commencing work in the mines, where he affiliated with the Knights of Labor, a secret organization of general character, which embraced the miners, as well as other trades. During the latter 80's, when there was such a bitter conflict for the supremacy between the leaders of the secret and open organizations, we find him taking an active part as a representative of the secret order of the K. of L., but being fearless and outspoken, and having little use for secret conclave in labor matters, true to his early training, he never tried to hide his love and admiration for the broad, open and liberal principles of legitimate trade unionism, and in conse-

quence, his attitude and influence did much towards bringing the belligerents together, and laying the foundation for the present form of the United Mine Workers' organization.

During the 90's, he served two years as national board member of the present miners' organization, and about five years as national secretary. His native wit, keen foresight, aptness as a debater, his experience, early training and fearless outspokenness, fitted him well for leadership, and he was a strong character and formidable opponent to those who came in contact with him in debate in the councils of the miners, and joint meetings of operators and miners.

For about seven years previous to his death, he held the position of commissioner or secretary of the eastern Ohio or Pittsburg No. 8 Vein Operators' Association, and represented the mine operators in the settlement of local and general differences with the miners, and the compliment paid to his ability and sterling honesty in every position of trust in which he was placed, in the addresses of C. E. Maurer, representative of the eastern Ohio operators; T. L. Lewis, national president, and Wm. Green, state president of the United Mine Workers of America, delivered at the tomb in Mt. Calvary Cemetery in this city, on the day of interment, is the strongest evidence of the high regard in which he was held by all classes connected with the mining industry.

Wm. Scaife, editor of the United Mine Workers' Journal, Indianapolis, Ind., and John Pringle, editor of the Labor World, Pittsburg, Pa., wrote in their papers very able commentaries on the life work of Mr. McBryde; so did the Index, published in this city, and many other newspapers, all expressing the same kindly sentiment: "Well done, thou good and faithful servant."

Mr. McBryde is survived by two sons, John, who resides at Barton, Ohio, and Arthur, a resident of this city.

G. H



APPOINTMENTS

CHIEF INSPECTORS APPOINTED SINCE THE CREATION OF THE DEPARTMENT.

| Name of Inspector. | County. | Governor by whom appointed. | Term began. | Term expired. | Time served | Remarks. |
|------------------------|-----------|-----------------------------|---------------|---------------|---------------|--------------------------|
| Andrew Roy, D. | Trumbull. | Wm. Allen, D. | April 6, 1874 | April 6, 1878 | 4 years. | Resigned. |
| Jas. D. Peston, D. | Hocking. | R. M. Bishop, D. | April 6, 1878 | Nov. 15, 1879 | 1 yr. 7 mo. | Not confirmed by Senate. |
| David Owens, D. | Trumbull. | R. M. Bishop, D. | Nov. 16, 1879 | Nov. 12, 1880 | 3 months. | |
| Andrew Roy, R. | Jackson. | Chas. Foster, R. | Feb. 12, 1880 | Feb. 16, 1884 | 4 years. | Resigned. |
| Thos. B. Bancroft, D. | Gallia. | Geo. Hoadley, D. | Feb. 16, 1884 | Apr. 1, 1888 | 4 yrs. 1½ mo. | Reappointed. |
| Robt. M. Haseltine, R. | Mahoning. | Joseph B. Foraker, R. | April 1, 1888 | Apr. 30, 1888 | 1 month. | Reappointed. |
| Robt. M. Haseltine, R. | Mahoning. | Joseph B. Foraker, R. | May 1, 1888 | Apr. 30, 1892 | 4 years. | Reappointed. |
| Robt. M. Haseltine, R. | Mahoning. | Wm. McKinley, Jr., R. | May 1, 1892 | Apr. 30, 1896 | 4 years. | Resigned. |
| Robt. M. Haseltine, R. | Mahoning. | Asa S. Bushnell, R. | May 1, 1896 | Apr. 30, 1900 | 4 years. | Incumbent. |
| Elmer G. Biddison, R. | Athens. | George K. Nash, R. | May 1, 1900 | Apr. 30, 1904 | 4 years. | Reappointed. |
| George Harrison. | Jackson. | Myron T. Herrick, R. | May 1, 1904 | Apr. 30, 1908 | 4 years. | |
| | | Andrew L. Harris, R. | Apr. 30, 1908 | Apr. 30, 1912 | 4 years. | |

DISTRICT MINE INSPECTORS APPOINTED SINCE THE CREATION OF THE DEPARTMENT.

| Name of Inspector. | County. | Governor by Whom Approved. | Politics. | Chief Inspector by Whom Appointed. | Term Began. | Term Expired. | Time Served. | Remarks. |
|------------------------|-------------|----------------------------|-----------|------------------------------------|-------------|---------------|-----------------|-------------|
| Jacob P. Klein, R. | Stark. | Chas. Foster. | R | Andrew Roy, D. | 6- 4-81 | 1-26-83 | 2 y, 7 m, 15 d | Resigned |
| Jno. P. Williams, R. | Trumbull. | Chas. Foster. | R | Andrew Roy, D. | 1-26-83 | 2-16-84 | 1 y. 21 d | Resigned |
| Austin P. King, Jr. D. | Columbiana. | Geo. Hoadley. | D | Thos. Bancroft. | 2-16-84 | 4-30-86 | 2 y, 2 m, 15 d | Resigned |
| Wm. Dalrymple, D. | Athens. | Geo. Hoadley. | D | Thos. Bancroft. | 5- 1-84 | 3- 1-88 | 3 y, 10 m. | Resigned |
| Wm. A. Davis, D. | Guernsey. | Geo. Hoadley. | D | Thos. Bancroft. | 5- 1-84 | 2-15-86 | 1 y, 9 m, 15 d | Resigned |
| Jos. L. Morris, R. | Coshocton. | Jos. B. Foraker. | R | Thos. Bancroft. | 2-15-86 | 6- 1-89 | 3 y, 2 m, 15 d | Resigned |
| D. J. Harry, R. | Jackson. | Jos. B. Foraker. | R | R. M. Haseltine. | 4- 1-88 | 4-30-88 | 1 m. | Reappointed |

| D. J. Harry, R. | Jackson. | Jos. B. Fornker. | R | R. M. Haseltine. | 5-1-'88 | 4-30-'91 | 3 y. | App. & Res. |
|-----------------------|-------------|-------------------|---|------------------|----------|-----------|-----------------|-------------|
| David E. Evans, R. | Meigs. | Jos. B. Fornker. | R | R. M. Haseltine. | 5-1-'88 | 4-30-'91 | 3 y. | Reappointed |
| Jag. W. Haugee, R. | Athens. | Jos. B. Fornker. | R | R. M. Haseltine. | 5-1-'88 | 4-30-'91 | 3 y. | Reappointed |
| Jas. W. Haugee, R. | Athens. | Wm. McKinley. | R | R. M. Haseltine. | 6-17-'92 | 6-28-'92 | 11 m, 23 d | Resigned |
| Robert Bell, R. | Stark. | Jos. B. Fornker. | R | R. M. Haseltine. | 5-8-'86 | 4-30-'87 | 1 y. | Reappointed |
| Robert Bell, R. | Stark. | Jos. B. Fornker. | R | R. M. Haseltine. | 5-1-'87 | 4-30-'88 | 2 y, 3 m, 11 d | Reappointed |
| Robert Bell, R. | Stark. | Jos. B. Fornker. | R | R. M. Haseltine. | 5-1-'88 | 8-11-'90 | 2 y, 8 m, 20 d | Reappointed |
| Elbenzer Lewis, D. | Summit. | Jas. E. Campbell. | D | R. M. Haseltine. | 8-11-'90 | 4-30-'91 | 3 y. | Reappointed |
| Elbenzer Lewis, D. | Summit. | Jas. E. Campbell. | D | R. M. Haseltine. | 5-1-'91 | 4-30-'94 | 2 y, 2 m. | Reappointed |
| Thos. H. Love, R. | Carroll. | Jos. B. Fornker. | R | R. M. Haseltine. | 6-1-'89 | 8-1-'91 | 1 y, 9 m, 15 d | Reappointed |
| Thos. H. Love, R. | Carroll. | Wm. McKinley. | R | R. M. Haseltine. | 7-15-'92 | 4-30-'94 | 3 y, 9 m, 15 d | Resigned |
| Thos. H. Love, R. | Carroll. | Wm. McKinley. | R | R. M. Haseltine. | 5-1-'94 | 2-13-'98 | 3 y, 11 m, 15 d | Resigned |
| Wm. B. Rennie, R. | Tuscarawas. | Jas. E. Campbell. | D | R. M. Haseltine. | 8-1-'91 | 7-15-'92 | 3 y. | Resigned |
| Jno. E. Short, D. | Hocking. | Jas. E. Campbell. | D | R. M. Haseltine. | 5-1-'91 | 5-7-'94 | 1 y, 2 m, 15 d | Resigned |
| A. P. McDonald, D. | Perry. | Jas. E. Campbell. | D | R. M. Haseltine. | 5-1-'91 | 7-13-'92 | 3 y. | Resigned |
| Wm. H. Turner, D. | Guernsey. | Jas. E. Campbell. | D | R. M. Haseltine. | 5-1-'91 | 4-30-'94 | 3 y. | Resigned |
| Rob't H. Miller, R. | Perry. | Wm. McKinley. | R | R. M. Haseltine. | 7-15-'92 | 4-30-'94 | 1 y, 9 m, 15 d | Resigned |
| Rob't H. Miller, R. | Perry. | Wm. McKinley. | R | R. M. Haseltine. | 5-1-'94 | 7-15-'98 | 4 y, 2 m, 15 d | Resigned |
| Alex. Beattie, R. | Athens. | Wm. McKinley. | R | R. M. Haseltine. | 7-15-'95 | 7-15-'98 | 3 y. | Resigned |
| Jno. P. Jones, R. | Stark. | Wm. McKinley. | R | R. M. Haseltine. | 7-15-'92 | 7-15-'95 | 3 y. | Resigned |
| Jno. P. Jones, R. | Stark. | Wm. McKinley. | R | R. M. Haseltine. | 7-15-'95 | 12-31-'97 | 2 y, 5 m, 15 d | Resigned |
| Sam'l Llewellyn, R. | Jackson. | Wm. McKinley. | R | R. M. Haseltine. | 5-9-'94 | 5-21-'97 | 3 y. | Resigned |
| Sam'l Llewellyn, R. | Jackson. | Asa S. Bushnell. | R | R. M. Haseltine. | 5-21-'97 | 5-19-'00 | 2 y, 11 m, 28 d | Resigned |
| Thos. McCough, R. | Belmont. | Wm. McKinley. | R | R. M. Haseltine. | 5-1-'94 | 4-30-'97 | 3 y. | Resigned |
| Thos. McCough, R. | Belmont. | Asa S. Bushnell. | R | R. M. Haseltine. | 5-1-'97 | 6-1-'00 | 3 y, 1 m. | Resigned |
| Thos. McCough, R. | Belmont. | Geo. K. Nash. | R | E. G. Biddison. | 6-1-'00 | 4-30-'03 | 2 y, 11 m. | Resigned |
| Thos. McCough, R. | Belmont. | Geo. K. Nash. | R | E. G. Biddison. | 5-1-'03 | 4-30-'06 | 3 y. | Resigned |
| Thos. McCough, R. | Belmont. | Myron T. Herrick. | R | Geo. Harrison. | 5-1-'06 | 9-15-'06 | 4 m, 15 d | Resigned |
| Elbenzer Jones, R. | Jefferson. | Andrew L. Harris. | R | Geo. Harrison. | 9-15-'06 | 4-30-'09 | 3 y. | Resigned |
| Rees T. Davis, R. | Columbiana. | Wm. McKinley. | R | R. M. Haseltine. | 5-1-'94 | 4-30-'97 | 3 y, 1 m. | Resigned |
| Rees T. Davis, R. | Columbiana. | Asa S. Bushnell. | R | R. M. Haseltine. | 5-1-'97 | 5-31-'00 | 3 y, 6 m. | Resigned |
| Wm. K. Moore, R. | Stark. | Asa S. Bushnell. | R | R. M. Haseltine. | 1-17-'98 | 7-15-'98 | 1 y, 11 m, 15 d | Resigned |
| Wm. K. Moore, R. | Stark. | Asa S. Bushnell. | R | R. M. Haseltine. | 7-15-'98 | 7-1-'00 | 2 y, 10 m, 15 d | Resigned |
| Jas. P. Davis, R. | Carroll. | Asa S. Bushnell. | R | R. M. Haseltine. | 2-15-'98 | 1-1-'01 | 2 y, 4 m. | Resigned |
| Jas. P. Davis, R. | Carroll. | Geo. K. Nash. | R | E. G. Biddison. | 1-1-'01 | 4-30-'03 | 2 y, 7 m. | Resigned |
| Jas. P. Davis, R. | Carroll. | Geo. K. Nash. | R | E. G. Biddison. | 5-1-'03 | 4-30-'06 | 2 y. | Resigned |
| Thos. M. Morrison, R. | Carroll. | Andrew L. Harris. | R | Geo. Harrison. | 7-5-'06 | 4-30-'09 | 1 y. | Resigned |
| W. Hull, R. | Athens. | Asa S. Bushnell. | R | R. M. Haseltine. | 7-15-'98 | 7-15-'99 | 2 y. | Resigned |
| vid H. Williams, R. | Athens. | Asa S. Bushnell. | R | R. M. Haseltine. | 7-15-'99 | 7-15-'01 | 2 y. | Resigned |

DISTRICT MINE INSPECTORS APPOINTED SINCE THE CREATION OF THE DEPARTMENT—Concluded.

| Name of Inspector. | County. | Governor by Whom Approved. | Political. | Chief Inspector by Whom Appointed. | Term Began. | Term Expired. | Time Served. | Remarks. |
|-------------------------|--------------|----------------------------|------------|------------------------------------|-------------|---------------|-----------------|-------------|
| David H. Williams, R... | Athens... | Geo. K. Nash... | R | E. G. Biddison... | 7-15-'01 | 7-15-'04 | 3 y... | Reappointed |
| David H. Williams, R... | Athens... | Myron T. Herrick... | R | Geo. Harrison... | 7-16-'04 | 7-15-'07 | 9 m, 29 d | Resigned |
| Lucius Hull, R... | Athens... | Myron T. Herrick... | R | Geo. Harrison... | 6-1-'04 | 4-30-'06 | 6 m, 22 d | Resigned |
| Jno. T. Dolan, R... | Hocking... | Myron T. Herrick... | R | Geo. Harrison... | 1-24-'05 | 4-30-'06 | 1 m... | Resigned |
| Jas. Pritchard, R... | Perry... | Myron T. Herrick... | R | Geo. Harrison... | 3-17-'05 | 4-30-'06 | 1 y, 1 m, 13 d | Reappointed |
| Jas. Pritchard, R... | Perry... | Andrew L. Harris... | R | Geo. Harrison... | 4-30-'06 | 4-30-'09 | 2 y, 3 m, 1 d | Resigned |
| David B. Wilson, R... | Perry... | Asa S. Bushnell... | R | R. M. Haseltine... | 7-15-'98 | 5-30-'00 | 1 y, 10 m, 15 d | Reappointed |
| David B. Wilson, R... | Perry... | Geo. K. Nash... | R | E. G. Biddison... | 6-1-'00 | 6-9-'03 | 3 y... | Resigned |
| R. M. Mason, R... | Hocking... | Geo. K. Nash... | R | E. G. Biddison... | 5-19-'00 | 4-30-'03 | 2 y, 11 m, 11 d | Reappointed |
| R. M. Mason, R... | Hocking... | Geo. K. Nash... | R | E. G. Biddison... | 5-1-'03 | 8-15-'03 | 2 y, 11 m... | Resigned |
| W. H. Turner, R... | Guernsey... | Geo. K. Nash... | R | E. G. Biddison... | 6-1-'00 | 4-30-'03 | 2 y, 11 m... | Reappointed |
| W. H. Turner, R... | Guernsey... | Geo. K. Nash... | R | E. G. Biddison... | 5-1-'03 | 4-30-'06 | 3 y... | Reappointed |
| W. H. Turner, R... | Guernsey... | Andrew L. Harris... | R | Geo. Harrison... | 4-30-'06 | 4-30-'09 | 3 y... | Incumbent |
| W. H. Miller, R... | Stark... | Geo. K. Nash... | R | E. G. Biddison... | 7-1-'00 | 7-15-'01 | 1 y... | Reappointed |
| W. H. Miller, R... | Stark... | Geo. K. Nash... | R | E. G. Biddison... | 7-15-'01 | 7-15-'04 | 3 y... | Reappointed |
| W. H. Miller, R... | Stark... | Myron T. Herrick... | R | Geo. Harrison... | 7-16-'04 | 7-15-'07 | 3 y... | Reappointed |
| *W. H. Miller, R... | Stark... | Andrew T. Harris... | R | Geo. Harrison... | 7-15-'07 | 7-15-'10 | 10 m, 24 d | Incumbent |
| W. H. Miller, R... | Stark... | Andrew L. Harris... | R | Geo. Harrison... | 6-1-'08 | 4-30-'11 | ... | Incumbent |
| Jno. Winfordner, R... | Muskingum... | Geo. K. Nash... | R | E. G. Biddison... | 6-9-'03 | 4-30-'06 | 11 m, 22 d | Resigned |
| Ed. S. Smith, R... | Hocking... | Geo. K. Nash... | R | E. G. Biddison... | 8-15-'03 | 4-30-'06 | 9 m, 16 d | Resigned |
| Thos. Waters, R... | Jackson... | Myron T. Herrick... | R | Geo. Harrison... | 6-1-'04 | 4-30-'06 | 2 y... | Reappointed |
| Jno. L. McDonald, R... | Jackson... | Andrew L. Harris... | R | Geo. Harrison... | 4-30-'06 | 4-30-'09 | ... | Incumbent |
| Thos. Waters, R... | Athens... | Myron T. Herrick... | R | Geo. Harrison... | 5-16-'05 | 7-15-'07 | 2 y, 1 m, 29 d | Reappointed |
| *Jno. L. McDonald, R... | Athens... | Andrew L. Harris... | R | Geo. Harrison... | 7-15-'07 | 7-15-'10 | 10 m, 24 d | Reappointed |
| Jno. L. McDonald, R... | Athens... | Andrew L. Harris... | R | Geo. Harrison... | 6-1-'08 | 4-30-'11 | ... | Incumbent |

* Law was changed, legislating out of office two inspectors (W. H. Miller and Jno. L. McDonald) on account of the section under which they were appointed being repealed, and they were re-appointed under the provision of the new section relating to the appointment of District Inspectors.

DISTRICTS

INSPECTORS AND DISTRICTS INTO WHICH THE STATE
IS DIVIDED, 1908.

GEO. HARRISON,

Chief Inspector of Mines, Wellston, Ohio.

FIRST DISTRICT.

Composed of the Counties of Jackson, Lawrence, Scioto, Vinton and Gallia.

THOS. WATERS, INSPECTOR,

Wellston, Jackson County, Ohio.

SECOND DISTRICT.

Composed of the Counties of Athens, Meigs, Washington and portion of Noble.

JOHN L. McDONALD, INSPECTOR.

Glouster, Athens County, Ohio.

THIRD DISTRICT.

Composed of the Counties of Hocking, Perry, Muskingum and Morgan.

JAMES PRITCHARD, INSPECTOR,

Hemlock Perry, County, Ohio.

FOURTH DISTRICT.

Composed of the Counties of Monroe, Belmont and portion of Jefferson.

EBENEZER JONES, INSPECTOR,

913 Broadway, Martins Ferry, Belmont County, Ohio.

FIFTH DISTRICT.

Composed of the Counties of Guernsey, Coshocton, Tuscarawas and portion of Noble.

W. H. TURNER, INSPECTOR,

Cambridge, Guernsey County, Ohio,

SIXTH DISTRICT.

Composed of the Counties of Carroll, Columbiana, Mahoning, Trumbull and a portion of both Jefferson and Harrison.

THOS. MORRISON, INSPECTOR,

Sherodsville, Carroll County, Ohio

SEVENTH DISTRICT.

Composed of the Counties of Medina, Stark, Summit, Wayne, Holmes, Portage and Ottawa.

W. H. MILLER, INSPECTOR.

R. D. No. 1, Massillon, Stark County, Ohio.

After the passage of the law April 15, 1908, creating three new inspectors, the number of districts was changed to ten, as follows:

FIRST DISTRICT.

Composed of the Counties of Jackson, Lawrence, Scioto, and a portion of both Gallia and Vinton.

THOS. WATERS, INSPECTOR,

Wellston, Jackson County, Ohio.

SECOND DISTRICT.

Composed of the Counties of Hocking, Meigs and a portion of both Vinton and Gallia.

EDWARD KENNEDY, INSPECTOR,

Sand Run, Hocking County, Ohio.

THIRD DISTRICT.

Composed of Athens County.

JOHN L. McDONALD, INSPECTOR,

Glouster, Athens County, Ohio.

FOURTH DISTRICT.

Composed of the Counties of Perry, Muskingum and Morgan.

WM. C. WIPER, INSPECTOR,

Malta, Morgan County, Ohio.

FIFTH DISTRICT.

Composed of the Counties of Guernsey, Noble and Washington, and the Cochran and Media mines, Belmont County.

W. H. TURNER, INSPECTOR,

Cambridge, Guernsey County, Ohio.

SIXTH DISTRICT.

Composed of the Counties of Tuscarawas, Coshocton and Columbiana.

ALEX SMITH, INSPECTOR.

Mineral City, Tuscarawas County, Ohio.

SEVENTH DISTRICT.

Composed of the Counties of Holmes, Mahoning, Medina, Ottawa, Portage, Stark, Summit, Trumbull and Wayne.

W. H. MILLER, INSPECTOR,

R. D. No. 1, Massillon, Stark County, Ohio.

EIGHTH DISTRICT.

Composed of a portion of Belmont County.

LOT JENKINS, INSPECTOR,

No. 4777 Jefferson Street,

Bellaire, Belmont County, Ohio.

NINTH DISTRICT.

Composed of the Counties of Carroll, Harrison, and portion of Jefferson.

THOS. MORRISON, INSPECTOR,

Sherodsville, Carroll County, Ohio.

TENTH DISTRICT.

Composed of a portion of both Belmont and Jefferson Counties.

EBENEZER JONES, INSPECTOR,

No. 913 Broadway,

Martins Ferry, Belmont County, Ohio.

INSPECTIONS

TABLE SHOWING NUMBER OF VISITS TO MINES MADE BY THE CHIEF INSPECTOR AND DISTRICT INSPECTORS IN THE VARIOUS COUNTIES OF THE STATE FROM JANUARY 1, 1908, TO DECEMBER 31, 1908, INCLUSIVE.

| Counties. | Waters. | Kennedy. | Pritchard. | McDonald. | Wiper. | Turner. | Smith. | Miller. | Jenkins. | Morrison. | Jones. | Chief Inspector, Geo. Harrison. | Total. |
|-----------------|---------|----------|------------|-----------|--------|---------|--------|---------|----------|-----------|--------|---------------------------------|--------|
| Athens..... | 5 | 8 | ... | 179 | 5 | ... | ... | ... | 132 | 4 | 76 | 7 | 204 |
| Belmont | ... | ... | ... | ... | ... | 6 | ... | ... | ... | ... | ... | 7 | 225 |
| Carroll..... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 44 | ... | ... | 44 |
| Columbiana..... | ... | ... | ... | ... | ... | ... | 36 | 4 | ... | 30 | ... | 4 | 74 |
| Coshocton..... | ... | ... | ... | ... | ... | 4 | 26 | ... | ... | ... | ... | ... | 30 |
| Gallia..... | ... | 7 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 7 |
| Guernsey..... | ... | ... | ... | ... | ... | 110 | ... | ... | ... | ... | 5 | 7 | 122 |
| Harrison..... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 15 | ... | 3 | 19 |
| Hocking..... | ... | 95 | 7 | 1 | ... | ... | ... | ... | ... | ... | ... | 5 | 108 |
| Holmes..... | ... | ... | ... | ... | ... | ... | ... | 10 | ... | ... | ... | ... | 10 |
| Jackson..... | 152 | ... | ... | 4 | ... | ... | ... | ... | ... | ... | ... | 6 | 162 |
| Jefferson..... | ... | ... | ... | ... | ... | 2 | ... | ... | 3 | 103 | 95 | ... | 203 |
| Lawrence..... | 44 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 44 |
| Mahoning..... | ... | ... | ... | ... | ... | ... | 1 | 11 | ... | 10 | ... | ... | 22 |
| Medina..... | ... | ... | ... | ... | ... | ... | ... | 24 | ... | ... | ... | ... | 24 |
| Meigs..... | 1 | 61 | ... | 9 | ... | ... | ... | ... | ... | ... | ... | ... | 71 |
| Morgan..... | ... | 2 | 1 | 2 | 3 | ... | ... | ... | ... | ... | ... | 3 | 71 |
| Muskingum..... | ... | 1 | 17 | 1 | 45 | 7 | ... | ... | ... | ... | ... | 4 | 75 |
| Noble..... | ... | ... | ... | ... | ... | 10 | ... | ... | ... | ... | ... | 2 | 12 |
| Ottawa..... | ... | ... | ... | ... | ... | ... | ... | 15 | ... | ... | ... | ... | 15 |
| Perry..... | ... | ... | 40 | 3 | 83 | 1 | ... | ... | ... | ... | ... | ... | 127 |
| Portage..... | ... | ... | ... | ... | ... | ... | ... | 13 | ... | ... | ... | ... | 13 |
| Scioto..... | 9 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 9 |
| Stark..... | ... | ... | ... | ... | ... | ... | ... | 126 | ... | 2 | ... | 4 | 132 |
| Summit..... | ... | ... | ... | ... | ... | ... | ... | 20 | ... | ... | ... | ... | 20 |
| Tuscarawas..... | ... | ... | ... | ... | ... | 30 | 84 | 3 | ... | ... | 3 | 5 | 125 |
| Vinton..... | 14 | 36 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 50 |
| Wayne..... | ... | ... | ... | ... | ... | ... | ... | 21 | ... | ... | ... | ... | 21 |
| Total..... | 225 | 210 | 65 | 199 | 136 | 170 | 147 | 247 | 136 | 208 | 179 | 57 | 1,979 |

In addition to the above, Chief Inspector Harrison and District Inspectors Turner, Miller and Jones spent five days in January completing the investigation of the cause of the mine disaster which occurred at Monongah, West Virginia, on December 6, 1907.

NOTE:—

April 15th by an act of the General Assembly three additional Inspectors were added to the inspection force, and the state was redistricted into ten districts with an Inspector in charge of each district. Some of the counties composing the former districts were transferred to other districts, and on this account the number of visits made by each Inspector cannot be given by Districts and have of necessity been credited by Counties as shown by the above table.

REPORTS OF DISTRICT MINE INSPECTORS

FIRST DISTRICT

THOS. WATERS.

FROM JANUARY 1ST TO JUNE 1ST, COMPOSED OF JACKSON, LAWRENCE,
SCIOTO, VINTON AND GALLIA COUNTIES.

FROM JUNE 1ST TO DECEMBER 31ST, INCLUSIVE, COMPOSED OF
JACKSON, LAWRENCE, SCIOTO COUNTIES AND A PORTION OF
VINTON AND GALLIA

Wellston, Ohio, January 1, 1909.

Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio:

My Dear Sir:—I have the honor of submitting to you my annual report in the First District, comprising the counties of Jackson, Gallia, Lawrence, Vinton and Scioto. This report is made with reference to locations, conditions, number of inspections made, improvements, number of new mines opened, number of mines abandoned, number of mines suspended and the number of fatal accidents with their causes.

The mines in this district, with but few exceptions, worked only about one-third time during the period covered by this report, and a number of mines remained idle throughout the entire year.

A number of mines in this district, especially in Jackson County, have been in operation a great many years. These mines are connected with old abandoned mines full of black damp and water, which is continually coming into the mines in operation.

With these conditions it makes it almost a physical impossibility to keep the mines in operation up to the requirements of the state laws governing the operation of mines.

With the exceptions of a few places, I am of the opinion that every effort is being made at the present time to keep the mines in the best possible condition.

In conclusion, I desire to thank you for the courtesies shown and the many advices given at all times.

Very respectfully yours,

THOS. WATERS, Wellston, Ohio,

Inspector First District.

December 31, 1908.

JACKSON COUNTY.

Superior No. 1.

Located at Wellston, Ohio, on the D., T. & I. R. R., and operated by the Superior Coal Co., Jackson, O.; Samuel Wilson, Wellston, O., superintendent, and Evan Thomas, Coalton, O., mine foreman. Shaft opening, 100 feet deep; No 2 seam of coal, 3 feet thick; double entry system; fan ventilation. Thirty-five miners and 19 day men employed. Four inspections made. Visited on May 12th, found ventilation deficient on the south entry. Gave orders to place the mine in lawful condition with as much haste as possible. Visted again on May 20th, and found conditions fair. This mine has been in operation for about twenty-seven years, and the solid coal is about all worked out.

Superior No. 3.

Located near Wellston, O., on the B. & O. S. W. R. R., and operated by the Superior Coal Co., Jackson, O.; Samuel Wilson, Wellston, O., superintendent, and Geo. Eberts, same place, mine boss. Shaft, 45 feet deep; No. 2 seam, 3 feet thick; double entry system and fan ventilation. Eighty-five miners and 47 day men employed. Eight inspections made. Visited on December 11th and found in very poor condition. While there was a fair volume of air at the face of the entries, it was not being properly distributed through the working places. Ordered breakthroughs in the rooms closed up and check doors erected on the entries. December 19th, mine in fair condition, orders on former visit having been complied with.

Superior No. 4

Located near Wellston, O., on the C., H. & D. R. R., and operated by the Superior Coal Co., Jackson, O.; Samuel Wilson, Wellston, O., superintendent, and Virgil Callahan, Coalton, O, mine boss. Shaft, 85 feet deep; No. 2 seam, 3 feet thick; double entry system, and fan ventilation. Forty-two miners and 22 day hands employed. Two inspections made. October 5th, mine in very bad condition, the roads being in a horrible state, covered with mud and water. The slope was also in very bad condition, being almost impossible to get in and out of the mine. Requested the mine foreman to place the mine in lawful condition.

Superior No. 8.

Located about three miles west of Wellston, O., on the C., H. & D. and B. & O. R. R., and operated by the Superior Coal Co., Jackson, O.; Samuel Wilson, Wellston, O., superintendent, and Jas. Duane, Coalton, O., mine boss. Shaft, into the No. 2 seam of coal, 4 feet thick; double entry; fan ventilation. Sixteen miners and 12 day men employed. Five inspections made. Conditions fair for a mine so near exhaustion. The pillars are being drawn, and the mine will soon be abandoned.

Superior No. 9.

Located about three mlies southeast of Wellston, O., on the C., H. & D. R. R., and operated by the Superior Coal Co, Jackson, O.; Samuel Wilson, Wellston, O., superintendent, and Chas. May, same place, mine boss. Shaft, penetrating the No. 2 seam of coal, 3½ feet thick; double entry, and ventilated by a 15-foot

Brazil fan. One hundred and forty-two miners and 91 day men employed. Two inspections made. January 30th, mine in very poor condition. The main north air course was filled up with water, blocking the air over the entire mine. Ordered the mine foreman to close the last two pair of east and west entries, and to open a breakthrough between the main entry and airway below the water. This accomplished, conditions were improved in the other part of the mine. Jeffrey electric machines mine the coal.

Superior No. 10; No. 2 Opening.

Situated about ten miles east of Wellston, O., on the C., H. & D. R. R., and operated by the Superior Coal Co., Jackson, O.; Samuel Wilson, Wellston, O., is superintendent, and Theo. Waters, same place, mine boss. Drift, No. 5 seam of coal, 3 feet thick; double entry system, and fan ventilation. Seventy miners and 37 day men employed. One inspection made, and found in fair condition. Mine closed down the 1st of April and remained so until the close of the year.

Superior No. 10; No. 1 Opening.

Same company; drift opening; No. 4 seam of coal, 4 feet thick, double entry; fan ventilation. Forty-one miners and 22 day men employed. Conditions fair. Jeffrey machines mine the coal. Idle since April 1, 1908.

Superior No. 12.

Situated about four miles east of Wellston, O., on the D. T. & I. R. R., and operated by the Superior Coal Co., Jackson, O.; Samuel Wilson, Wellston, O., superintendent, and David Powell, same place, mine boss. Shaft, No. 2 seam of coal, 28 inches thick; double entry system; fan ventilation. Thirty-one miners and 20 day men employed. Three inspections made. Conditions fair. Jeffrey electric machines mine the coal.

Wellston Colliery No. 1.

Located about two miles east of Wellston, O., on the C., H. & D. R. R., and operated by the Wellston Colliery Co., Wellston, O.; Walter McCloud, Wellston, O., superintendent, and Henry Shiers, same place, mine boss. Shaft opening, 89 feet deep, penetrating the No. 2 seam of coal, 3½ feet thick; double entry system, and ventilated by a 12-foot steam fan, Wellston make. This is a new mine, ground being broken for the shaft October 22, 1908. The hoisting shaft is 8½x20 feet and 89 feet deep. This shaft was put down in 15 days. The escapement shaft is 8x10 feet and 79 feet deep. This was sunk in 12 days, a switch built and tippie erected and coal ready to be loaded on cars January 1, 1909. The company owns about 125 acres of the No. 2 coal, said to be of excellent quality. The surface equipment of this mine is good. no expense is being spared to make this an up-to-date mine. When properly developed it will compare with any mine in Jackson County. The coal is being mined with picks, but electric machines will be installed in the near future.

D. C. & I. No. 1.

Situated near Wellston, O., on the C., H. & D. R. R., and operated by the Dayton Coal & Iron Co., Wellston, O. Herbert Poore, Wellston, O., superintendent, and Cornelius Coyle, same place, mine boss. Shaft, 89 feet deep, into

No 2 seam of coal, 3 feet thick, double entry system, and fan ventilation. Thirty-eight miners, 23 day men employed. One inspection made, and mine found in poor condition, and has since been abandoned.

D. C. & I. No. 2.

Located at Wellston, O., on the B. & O. S. W. R. R., and operated by the Dayton Coal & Iron Co., Wellston, O. Herbert Poore, Wellston, is superintendent, and Robert Pope, same place, mine boss. Shaft to the No. 2 seam of coal, 4 feet thick, double entry system, fan ventilation. Ninety-five miners, 31 day men employed. Conditions excellent. Coal is mined by Jeffrey electric machines.

D. C. & I. No. 3.

Situated at Wellston, O., on the C., H. & D. R. R., being a shaft opening 85 feet deep to the No. 2 seam of coal, double entry, and fan ventilation. Seven miners, 6 day men employed. Mine in fairly good condition. Robert Pope, superintendent; Herbert Poore, mine boss. This mine is operated by the same company as the No. 1 and No. 2 mines.

Domestic.

Located about two miles east of Wellston, O., on the D., T. & I. R. R., and operated by the Domestic Coal Co., Wellston, O. H. A. Goddard, same place, superintendent; Calvin Littlejohn, Wellston, O., mine boss. Shaft 92 feet deep. No. 2 seam of coal, 3½ feet thick, double entry system, fan ventilation. Eighty miners, 40 day men employed. Three inspections made. Conditions fair, on January 22nd and June 24th. Visited again on September 14th, and ventilation found weak in some parts of the mine, on account of the bad condition of doors and brattices. Also found powder being taken in the mine while the power was on the wires. Strict orders were given that no powder was to be taken into the mine while the power was on, and that this practice be discontinued at once.

Tom Corwin No. 1.

Situated near Glen Roy, O., on the C., H. & D. R. R., and operated by the Tom Corwin Coal Co., Dayton, O. Geo. Welch, Glen Roy, O., superintendent and mine boss. Shaft 104 feet deep, No. 2 seam, 3 feet thick, double entry system, and ventilated by a 15-foot Brazil fan. Fifty-six miners and 26 day men employed. Six visits made. Conditions have been very poor during the entire year in some parts of the mine. December 8th, first east entry on north side was in very bad condition; no measurement of air could be secured at the face of entries; the airway was almost closed up with slate. Ordered the mine boss to close down this entry and to place it in lawful condition to comply with the law.

Banchor No 1 & No. 2.

Located about 4 miles east of Wellston, O., on the D., T. & I. R. R., and operated by G. Y. Banchor, Wellston, O. Frank Downard, Wellston, mine boss. Drift opening into the No. 4 seam of coal, 4 feet thick, double entry system, furnace ventilation. Forty miners and 10 day men employed. Seven inspections made. October 13th, ventilation deficient in both openings, the airway

being badly choked with slate, and canvas was being used in place of doors. Gave instructions to have the canvas removed and doors erected, and to open the airway. December 10th, found both openings in fair condition, orders on my former visit having been complied with.

Standard.

Situated at Glen Roy, O., on the D., T. & I. R. R., and operated by the Northern Coal Co., Jackson, O. E. D. Jones, Jackson, O., superintendent, and Jno Rockwell, Glen Roy, O., mine boss. Shaft penetrating the No. 2 seam of coal 3 feet thick, single entry system, fan ventilation, and employs 9 miners and 6 day men. Two visits made, general conditions fair. Mine is now abandoned.

Grace.

Located on Ada Switch, transportation D., T. & I. R. R. Operated by Chapman Coal Co., Jackson, O. J. E. Hayes, Chapman, O., superintendent; Frank Pierpoint, Wellston, O., mine boss. Shaft 100 feet deep to the No. 2 seam of coal, 3 feet thick, single entry system, fan ventilation. One hundred miners, 49 day men employed. February 4th, found in poor condition, the air was leaking through the brattice on the main entry and returning to the outlet before it reached the working places. February 12th, slightly improved. Coal is mined and hauled to the shaft bottom by electric power.

Wills.

Located on C., H. & D. R. R., operated by Evans Coal Co., Coalton, O. E. D. Evans, Coalton, superintendent; W. L. Rawlins, Byer, O., mine boss. Drift to the No 1 seam of coal 3 feet thick, single entry system, furnace ventilation. Fifteen miners, 5 day men employed. February 5th visited and found idle. November 9th, in fair condition. Mine has been idle the greater portion of the year.

Rhoades & Sells.

Situated on C., H. & D. R. R., and operated by Rhoades & Sells Coal Co., Coalton, O. A. E. Rhoades, Coalton, O., superintendent and mine boss. Drift, No. 2 seam of coal, 3 feet thick, single entry system, and fan ventilation. Nine miners, 3 day men employed. July 3rd, conditions bad, owing to condition of brattice between the main entry and airway. Some very bad top was found on the entry, and requested the mine boss to repair the brattice and timber entry.

Emma No. 2.

Located near Glen Roy, O., on the D. T. & I. R. R., operated by the Emma Coal Co., Jackson, O. Edwin Jones, Jackson, O., superintendent; John Rockwell, Glen Roy, O., mine foreman. Shaft 80 feet deep, penetrating the No. 2 seam of coal 3 feet thick, double entry system, fan ventilation. Ten miners, 5 day men employed. February 7th, mine found in horrible condition; no measurement of air could be secured at the face of entry. Ordered the mine boss to close the mine. Visited on February 21st, and some slight improve-

ments noted. Permission was given to resume work. This mine was shut down twice during the year on account of non-compliance with the law. Tested scales on December 16th, and found correct.

Acorn Slope.

Situated near Glen Roy, O., on the D., T. & I. R. R., operated by Jones Coal Co., Jackson, O. E. T. Jones, Jackson, superintendent; M. M. Morgan, same place, mine boss. Slope 440 feet long, into the No. 2 seam of coal 3 feet thick, double entry system, fan ventilation. Eleven miners, 5 day men employed. Conditions fair. Solid coal is all worked out and the entry pillars are being drawn.

Jackson & Decatur.

Located on the D., T. & I. R. R., operated by Jackson & Decatur Coal Co., Jackson, O. Robert Campbell, Jackson, O., superintendent, and Samuel Overly, same place, mine boss. Drift into the No. 1 seam of coal 3 feet thick, single entry, furnace ventilation. Eleven miners, 4 day men employed. Mine in very bad condition the entire year.

Jackson & Decatur No. 2.

Situated near the No. 1, and operated by the same company. Drift, No. 1 seam, 3 feet thick, furnace ventilation, single entry system, and employs 7 miners and 2 day men. September 19th, mine in very bad condition. The air shaft was almost closed up. Requested mine boss to shut down the mine and open up the air shaft. Visited on September 22nd, mine in fair condition. Former orders having been complied with.

Jones & Morgan No. 3.

Located near Glen Roy, O., on the D., T. & I. R. R., operated by Jones & Morgan Coal Co., Jackson, O. Moses Morgan, Jackson, O., superintendent, and David Jones, same place, mine foreman. Slope 150 feet long into the No. 2 seam of coal, 3 feet thick, single entry and fan ventilation. Twenty miners and 12 day men employed. Three inspections made and conditions fair.

Chapman.

Situated near Chapman, O., on the D., T. & I. R. R., operated by Chapman Coal Co., Jackson, O. J. E. Hayes, Chapman, O., superintendent; Jacob Houser, same place, mine boss. Drift, No. 2 seam of coal, 3 feet thick, single entry system, fan ventilation. Eighteen miners, 7 day men employed. Mine in very poor condition, the ventilation being deficient and top on entry very bad and not safe for men to travel in and out. The mine boss was requested to close down the mine and place it in lawful condition to conform with the law. This mine has been idle the greater portion of the year.

Crescent.

Located near Jackson, O., on the D., T. & I. R. R., and operated by Crescent Coal Co., Jackson, O. Jno. Jones, Jackson, O., superintendent and mine

boss. Drift, into the No. 2 seam of coal 28 inches thick, single entry system, furnace ventilation. Thirty miners and 7 day men employed. Two visits made and conditions fair.

Central.

Situated on the D., T. & I. R. R., and operated by the Central Coal Co., Jackson, O. Jno. Armstrong, Jackson, O., superintendent, and Sherman Walker, Coalton, O., mine boss. Drift, into No. 1 seam of coal 3 feet thick, single entry system, fan ventilation. Seventeen miners and 8 day men employed. February 24th, mine in poor condition. Visited again July 22nd and found in first-class condition, a large fan having been installed.

Armstrong Slope.

Located on D., T. & I. R. R., operated by Armstrong Coal Co., Jackson, O. Jno. Armstrong, Jackson, O., superintendent; Gus Smales, same place, mine boss. Slope, 60 feet long into the No. 2 seam of coal, 3 feet thick, worked on the single entry system and ventilated by a fan. Twenty-five miners and 10 day men employed. Three inspections made, and conditions good.

Lucy No. 3.

Owned by the same company. Drift, No. 2 seam of coal, single entry system, furnace ventilation. Nine miners, 3 day men employed. Two inspections made, and mine found in good condition.

C. K.

Located on Price Switch, transportation D., T. & I. R. R. Operated by C. K. Coal Co., Wellston, O. W. P. Porter, Wellston, O., superintendent, and Roy Gilland, Jackson, mine boss. Drift opening, No. 2 seam of coal, 3 feet thick, double entry system, furnace ventilation, and employs 30 miners and 7 day men. June 25th, found in very bad condition. Ventilation was deficient in all parts of the mine. Requested mine foreman to close mine down at once. June 30th, conditions somewhat improved, and permission was given to resume operation. Visited again on November 17th, and found ventilation deficient on the first west entry, the last part of this entry being driven on the single entry system, and there were three rooms that were in need of doors. Ordered doors erected immediately.

Comet No. 1.

Located at Wellston, O., on the D., T. & I. R. R., operated by Comet Coal Co., Wellston, O. B. F. Billingsley, Wellston, O., superintendent; Henry Shiers, same place, mine boss. Shaft into the No. 2 seam of coal, 4 feet thick, double entry, fan ventilation, and employs 10 miners and 4 day men. Three inspections made, conditions fair for a mine so near exhaustion. This mine has since been abandoned.

Cochran.

Located on the D., T. & I. R. R., operated by the Cochran Coal Co., Jackson, O. A. J. Cochran, Jackson, O., superintendent; S. W. Claar, same place, mine boss. Drift, No. 1 seam, 3 feet thick, double entry, fan ventilation, and employs 34 miners and 10 day men. March 7th, mine in very bad condition,

ventilation deficient in all parts of the mine; ordered the mine boss to close the mine down and placed in condition to conform with the law. March 14th, in fair condition. Visited again on October 16th and found in good condition.

Evans.

Located at Oak Hill, O., on the B. & O. S. W. R. R. and operated by the Ward Coal Co., Oak Hill, O. Frank Ward, Oak Hill, superintendent; Chas. Bowman, same place, mine boss. Drift No. 5 seam, 3 1-3 feet thick, single entry, furnace ventilation, and employs 11 miners and 5 day hands. This mine was in very poor condition the entire year. October 29th, found that the management was making some improvements, a new opening being put down near the main west entry which, when completed, will be used for the inlet of air. This should place the mine in good condition.

Pritchard.

Situated near Coalton, O., on the C., H. V. & T. R. R., and operated by Henry Pritchard, Coalton, O. Drift, No. 2 seam of coal, 28 inches thick, single entry, furnace ventilation, and employes 8 miners and 4 day men. March 26th, found in very bad condition, the furnace not being fired a measurement of air could not be secured in the mine. Ordered the men out and gave strict orders that no one should enter the mine until the furnace was properly fired. October 12th, ventilation was again found deficient, the inlet was so small that it was impossible for a sufficient amount of air to enter the mine. Ordered the superintendent, Mr. Pritchard, to open up the inlet and make other necessary repairs.

Davis Fire Brick.

Located at Oak Hill, O., on the B. & O. S. W. R. R., and operated by the Davis Fire Brick Co., Oak Hill, O. J. E. Davis, Oak Hill, O., superintendent, and Jesse Smith, same place, mine boss. Drift, No. 5 seam of coal, 2½ feet thick, double entry, furnace ventilation, and employs 13 miners and 4 day men. Two inspections made and found in fair condition. The company's brick plant located near the mine consumes the entire output of coal.

Victor.

Situated near Coalton, O., on the C., H. & D. R. R., and operated by T. J. Evans, Coalton, O., who is superintendent, and L. A. Freeman, same place, mine boss. Drift, No. 2 seam, 26 inches thick, single entry system, furnace ventilation, and employs 7 miners and 2 day hands. March 30th, mine found in very bad condition, employing natural ventilation. Conditions were so bad that the mine boss was ordered to take the men out immediately, and to ventilate the mine by artificial means. August 3d, found in fairly good condition, an air shaft had been sunk and a small furnace built.

Globe.

Located near Jackson, O., on the B. & O. S. W. R. R., and operated by the Globe Iron Co., Jackson, O. J. E. Jones, Jackson, O., superintendent, and R. L. Lewis, same place, mine boss. Shaft, 104 feet deep, penetrating the No. 1 seam of coal, 4 feet thick, double entry system, fan ventilation, and employs 28 miners

and 15 day hands. New mine opened up during the year. April 15th, found communications had not been made between the two openings, and the mine boss developing the mine. The mine foreman was informed that the law would not permit him to develop the mine until communication was made between the two openings. May 25th, found communication had been made and the mine in good condition, but generating considerable amount of gas. The mine boss was requested to have all working places examined every morning by a competent man with a safety lamp.

Northern.

Located near Glen Roy, O., on the D., T. & I. R. R., and operated by the Northern Coal Co., Jackson, O. E. D. Jones, Jackson, O., superintendent, and Jno. Rockwell, Glen Roy, O., mine boss. Shaft, 42 feet deep to the No. 2 seam of coal, 3 feet thick, single entry system, fan ventilation, and employs 25 miners and 11 day hands. Three inspections made. This mine has been a source of annoyance during the whole year. Ventilation was deficient and the air polluted with black damp. The mine boss was ordered to increase the volume of air at the face of entries, and to keep the mine free from black damp.

Springfield.

Located on switch of the D., T. & I. R. R., and operated by the Chapman Coal Co., Jackson, O. J. E. Hayes, Chapman, O., superintendent, and W. J. Elsagale, same place, mine boss. Shaft, 54 feet deep, into the No. 2 seam of coal, 3 feet thick, single entry system, fan ventilation, pick and machine mining, and employs 78 miners and 38 day men. Inspected May 4th and found in poor condition; the airway was all choked up with slate and the brattice between the airway and entry was in very bad condition. Ordered the mine boss to shut down the first and second west entries, and to clean the airway out, and build new brattices in all breakthroughs between the airway and main entry.

Star Furnace.

Situated near Jackson, O., on the D., T. & I. R. R., and operated by the Star Furnace Co., Jackson, O. L. V. Brown, Jackson, O., superintendent, and Jeffrey Whaley, same place, mine boss. Drift, No. 1 seam of coal, 3 feet thick, double entry system, furnace ventilation, and employs 33 miners and 18 day men. Mine found in good condition.

Midway.

Located about two miles southeast of Wellston, O., and operated by V. A. Pittenger, Wellston, O. N. L. Braley, same place, is mine foreman. Drift, No. 4 seam of coal, 4 feet thick, single entry system, furnace ventilation, and employs 12 miners and 5 day men. May 19th, in very poor condition, employing natural ventilation. Rooms were being driven over 60 feet without breakthroughs. Ordered the mine foreman to close the mine down, build a furnace and to make breakthroughs at the proper distance apart. October 22d, found in fair condition, a small furnace had been built and breakthroughs made every 60 feet.

Price.

Situated on Price Switch, transportation D., T. & I. R. R.; operated by W. A. Gosline, Toledo, O. J. C. Hurd, Jackson, O., superintendent, and Arthur

Mapes, same place, mine boss. Drift, No. 2 seam of coal, 26 inches thick, single entry system, furnace ventilation, and employs 42 miners and 12 day men. Two inspections made, and general conditions fair.

Holberg.

Located near Jackson, O., and operated by Henry Holberg, Jackson, O. Wm. Moore, Jackson, O., mine foreman. Drift, No. 2 seam, 26 inches thick, single entry system, ventilated by a fire basket. Eight miners and 3 day men employed. This mine was in very poor condition.

Sun.

Situated on the D., T. & I. R. R.; operated by the Sun Coal Co., Jackson, O. Wm. Rohady, Jackson, O., superintendent, and Chas. Booth, same place, mine boss. Drift, into the Jackson Hill seam of coal, 28 inches thick, single entry system, and ventilated by a furnace. Thirty-five miners and 12 day men employed. August 31st, ventilation deficient. Ordered furnace built higher in order to increase the volume of air. September 19th, found in fairly good condition.

Reynold.

Located on the Ada switch, transportation D., T. & I. R. R. Operated by Chas. Reynolds, Jackson, O., mine boss and superintendent. Drift, No. 2 seam of coal, single entry, natural ventilation. Employs 7 miners and 3 day men. Mine in poor condition.

Ohio.

Situated at Oak Hill, O.; operated by the Oak Hill Fire Brick Co., Oak Hill, O. David Davis, Oak Hill, O., superintendent, and Geo. Sharp, same place, mine boss. Drift into the No. 5 seam of coal, $3\frac{1}{2}$ feet thick, single entry system, furnace ventilation, and employs 7 miners and 3 day men. Mine in fair condition. The company's brick plant consumes the entire output of this mine.

Hippel.

Located on the Ada Switch, transportation D., T. & I. R. R., operated by the Harper Coal Co., Coalton, O. J. E. Harper, Coalton, O., superintendent, and J. E. Rowe, same place, mine boss. Slope, 125 feet long, penetrating the No. 2 seam of coal, 3 feet thick, single entry system, fan ventilation, and employs 30 miners and 11 day men. Mine found in fair condition.

Jackson Hill.

Situated on the Springfield Switch, transportation D., T. & I. R. R., operated by the Emma Coal Co., Jackson, O. Edwin Jones, Jackson, O., superintendent, and Jno. Ritchards, same place, mine boss. Drift, No. 2 seam of coal, 3 feet thick, furnace ventilation, single entry system, and employs 52 miners and 17 day men. Conditions fair.

Cameron.

Located on the C., H. & D. R. R., operated by the Gem City Coal Co., Dayton, O. Jesse Eldridge, Rocky Hill, O., superintendent and mine boss. Drift,

No. 5 seam of coal, 30 inches thick, single entry system, furnace ventilation, and employs 12 miners and 3 day men. August 28th, mine found in very bad condition. Ordered the mine boss to shut the mine down and place in condition to conform to the mining law. September 4th, mine found in improved condition.

Alma No. 2.

Located 3 miles east of Wellston, O., on the D., T. & I. R. R., operated by the Alma Coal Co., Wellston, O. W. P. Porter, Wellston, O., superintendent, and Frank Cragg, same place, mine boss. Shaft, No. 2 seam of coal, 28 inches thick, double entry system, fan ventilation, and employs 8 miners and 4 day men. New mine just opened up and generates considerable amount of gas. Ordered the management to purchase a safety lamp and to have the mine examined by a competent person every morning before the men were allowed to enter the mine. Also ordered brattice cloth used to carry the air from the last breakthrough to the face of the entries. Condition of the mine was good.

Dewitt.

Located on the D., T. & I. R. R., operated by the Dewitt Coal Co., Wellston, O. Willard Dewitt, superintendent and mine boss. Drift, No. 5 seam, 3 feet thick, double entry system, furnace ventilation, and employs 15 miners and 5 day hands. Mine in first-class condition.

Kessler.

Situated on the D., T. & I. R. R., operated by the Kessler Coal Co., Wellston, O. David Hudson, superintendent and mine boss. Drift, No. 4 seam, double entry system, fan ventilation. Employs 17 miners and 5 day hands. Conditions fair.

Limestone.

Located on the C., H. & D. R. R., operated by the Remple Fuel Co., Dayton, O. E. D. Brockard, Jep, O., superintendent, and Frank Young, Rempel, O., mine boss. Drift, No. 4 seam of coal, $3\frac{1}{2}$ feet thick, single entry, furnace, and employs 20 miners and 5 day men. Mine in fair condition.

Thomas Davis.

Situated at Oak Hill, O., operated by Thos. Davis, Oak Hill, O. Jno. Jones, superintendent and mine foreman. Drift, No. 4 seam, 4 feet thick, single entry system, furnace ventilation and employs 6 miners and 2 day men. October 21st, mine in poor condition; canvas was being used in place of doors, and furnace stack burnt down. Ordered the mine boss to erect doors and rebuild furnace stack. October 29th, mine in fair condition. Former orders complied with.

Jackson Iron & Steel Co.

Located on the D., T. & I. R. R., operated by Jackson Iron & Steel Co., Jackson, O. B. F. Lambert, Jackson, O., superintendent and mine boss. Shaft, 50 feet deep into the No. 1 seam of coal, $3\frac{1}{2}$ feet thick, double entry, fan ventilation, and employs 41 miners and 8 day men. Mine in first-class condition.

Shook.

Situated on the C., H. & D. R. R., operated by the Hively Shook Coal Co., Coalton, Ohio, Drift, No. 2 seam of coal, 24 inches thick, single entry system, ventilated by fire basket, and employs 5 miners and 1 day man. Conditions fair. Geo. Hively superintendent and mine boss.

Diamond.

Located at Oak Hill, O., operated by the Diamond Brick Co., Oak Hill, O. C. H. Shepard, same place, mine boss and superintendent. Drift, No. 4 seam, 4 feet thick, single entry, furnace ventilation. Employs 4 miners, 2 day men. Mine in good condition.

Collard.

Situated on the Chapman Switch, transportation D., T. & I. R. R., operated by F. C. Collard, Coalton, O., who is superintendent and mine boss. Drift, No. 2 seam of coal, 30 inches thick, single entry, natural ventilation, and employs 5 miners and 2 day men. Mine in very poor condition. Ordered mine ventilated by artificial means of some description.

Buckeye or Emma No. 4.

Located on the C., H. & D. R. R., operated by the Emma Coal Co., Jackson, O. Edwin Jones, Jackson, O., superintendent, and Dan. C. Jones, Coalton, O., mine boss. Drift, No. 2 seam, 3 feet thick, single entry, furnace ventilation. Employs 8 miners and 2 day men. Mine in fair condition.

Bloomfield.

Located on the C., H. & D. R. R., operated by the Bloomfield Coal Co., Jackson, O., R. F. D. No. 7. Drift, No. 4 seam of coal, single entry furnace ventilation, and employs 18 miners and 6 day men. Mine visited and found idle. Geo. Edgil, superintendent and mine boss.

Steinmetz.

Situated on the D., T. & I. R. R., operated by Jno. Steinmetz, Coalton, O. Drift opening, No. 2 seam of coal, 28 inches thick, single entry system, and employs 3 miners and 2 day men. Found in poor condition.

Turner.

Located on the Springfield Switch, transportation D., T. & I. R. R., operated by the Turner Coal Co., Coalton, O. Harley Turner, Coalton, O., superintendent and mine boss. Drift, No. 2 seam, 30 inches thick, single entry system, natural ventilation, and employs 3 miners and 2 day men. Conditions fair.

Rowe.

Located on a switch of the D., T. & I. R. R., and operated by Wm. Rowe, Coalton, Ohio. Richard Maddox, Coalton, O., mine boss. Drift opening into

the No. 2 seam of coal, 28 inches thick, single entry system, furnace ventilation, and employs 14 miners and 2 day men. Conditions were poor, owing to the bad condition of doors and brattices.

Commercial.

Located on the C. H. & D. R. R., and operated by the Mohawk Coal Co., Coalton, O. Joseph Turner, Coalton, O., is superintendent, and Geo. Mohmester, same place, mine boss. Drift, opening into the No. 5 seam of coal, 3 feet thick. Single entry system and ventilated by a furnace. Twelve miners and 3 day men employed. Visited and found idle.

VINTON COUNTY.

Morgan.

Located near McArthur, O., operated by J. F. Morgan, McArthur, O., who is superintendent and mine boss. Drift, opening into the No. 4 seam of coal, 3 feet thick, worked on the double entry system, ventilated by furnace, and employs 9 miners and 3 day men. May 6th, mine found in very bad condition. No measurement of air could be secured in any part of the mine. Mine boss was given orders to take the men out of the mine at once. Visited on May 19th, and found some slight improvement made, and permission was given to resume operation.

Alma Cement Lime Mine No. 1.

Situated at Oreton, O., operated by the Alma Cement Co., Wellston, O. E. D. Wicks, Wellston, O., superintendent; David Aberts, mine boss. Drift, opening into a seam of limestone 5 feet thick, double entry system, fan ventilation, employs 31 miners and 17 day men. Conditions fair.

Alma Cement Old Mine No. 2.

Operated by same company as the No. 1. Drift opening into a seam of lime 6 feet thick, double entry system, fan ventilation, and employs 12 miners and 7 day men. Ventilation was very weak in this mine.

Raccoon Valley (East Opening).

Situated at Zaleski, O., transportation B. & O. R. R., operated by the Raccoon Valley Coal Co., Columbus, O. Jacob Jurno, Zaleski, O., superintendent; Jno. Burns, same place, mine boss. Drift, No. 4 seam of coal, 3½ feet thick, double entry system, ventilated by basket; mine in very bad condition. Ventilation deficient, and entries were being driven over 100 feet without breakthroughs. All places exceeding 60 feet were stopped immediately. Twelve miners and 5 day men employed.

Raccoon Valley (West Opening).

Operated by same company as the East Opening; drift, into the No. 4 seam of coal, 3 feet thick, double entry system, ventilated by fire basket. Twenty-two miners, 8 day men employed. This opening was in very poor condition, en-

tries being driven over 60 feet without breakthroughs; ordered all such places stopped which were driven over the 60 feet limit, and breakthroughs made at the proper distance.

Monitor.

Located near Lincoln Furnace, transportation D. T. & I. R. R., operated by the Monitor Coal Co., Wellston, O. O. S. Callahan, Wellston, O., has entire supervision. Drift, No. 4 seam, 4 feet thick, double entry system and fan ventilation. Twenty-two miners and 4 day men employed. Four inspections made. August 24th, mine found in very bad condition; canvas being used in place of doors. This was ordered discontinued at once and doors erected. No measurement of air could be secured on the first east entry, and the mine boss was ordered to take the men out at once.

Raccoon Valley.

Situated at Minerton, O., transportation on the C. H. V. & T. R. R., operated by J. L. Lawler, Columbus, O. E. J. Lawler, Minerton, O., superintendent and mine boss. Drift opening into the No. 4 seam of coal, worked on the double entry system, fan ventilation and employs 40 miners and 14 day men. This mine was in excellent condition.

Tompkins.

Located on the H. V. R. R., and operated by the Fobes Tompkins Coal Co., Columbus, O. J. J. Murphy, Minerton, O., superintendent and mine boss. Drift opening into the No. 4 seam of coal 4 feet thick, double entry system, fan ventilation and employs 50 miners and 8 day men. Mine found in poor condition, on account of insufficient amount of air at the inlet for the number of men employed in the mine. A furnace was being used for ventilating the mine at this time. Advised the management to install a fan. There being but one opening at this mine the force was reduced to ten men.

Alma Cement No. 1.

Located at Oreton, O., on the C. H. V. & T. R. R., and operated by the Alma Cement Co., Wellston, O. Wm. Davis, Oreton, superintendent, and Thos. Davis, same place, mine boss. Drift, No. 4 seam, 4 feet thick, double entry, fan ventilation, employing 70 miners and 20 day men. Mine found in good condition.

Alma Cement Lime No. 2.

New opening operated by the same company as the No. 1 mine. Wm. Davis, superintendent, and Lewis McDonald, mine boss. Drift opening into a seam of limestone 6 feet thick, double entry system, fan ventilation, and employs 25 miners and 10 day men. Mine in good condition.

LAWRENCE COUNTY.

Cobb No. 3.

Located at Aetna Station, on the D., T. & I. R. R., operated by the Halley Coal Co., Pedro, O. Griff Morgan, Pedro, O., is superintendent, and Jno. Brown,

same place, mine boss. Drift opening to the No. 5 seam of coal, 3 feet thick, single entry, furnace ventilation, employing 38 miners and 8 day men. General conditions of this mine have been good during the entire year.

Cobb No. 2.

Located at Etna, O., on the D. T. & I. R. R., operated by the same company as the No. 3 mine, same superintendent, with David Evans as mine boss. Drift opening to the No. 5 seam of coal, 3 feet thick, worked on the single entry system, furnace ventilation, employs 65 miners and 18 day men. November 10th and 20th mine found in very poor condition, and ordered the mine boss to stop 16 rooms on the 2nd south entry; there were 22 miners working on this entry, and it was impossible to secure a measurement of air at the face of the entry. Advised the mine boss to build a large furnace and to open out the breakthroughs between rooms. December 29th, mine in good condition. A large furnace had been built and breakthroughs in rooms had been opened out.

Black Fork No. 6.

Situated at Black Fork, O., on the B. & O. S. W. R. R., operated by the Black Fork Coal Co., Black Fork, O. W. E. Leonard, superintendent, Black Fork, O., and Jos. Calvin, same place, mine boss. Drift opening into the No. 6 seam of coal, 26 inches thick, double entry system, furnace ventilation, employing 8 miners and 3 day men. Visited and found idle. Tested scales and found them weighing correct. This mine has since been abandoned.

Clarion No. 4.

Operated by the same company as the No. 6 mine. Drift opening into the No. 4 seam of coal, 3½ feet thick, double entry system, furnace ventilation, employs 19 miners and 10 day hands. This mine was found in fair condition. Jno. Hanes, Black Fork, O., is mine boss.

York Portland Cement Lime Mine.

Located on the B. & O. S. W. R. R., and operated by the York Portland Cement Co., Portsmouth, O. Arthur Stevens, Elfort, O., superintendent, and M. C. Dickens, same place, mine boss. Drift, into a seam of limestone 5 feet thick, double entry system, ventilated by a furnace. Seventeen day hands find employment. Mine in good condition.

Superior Portland Cement.

Situated on the D. T. & I. R. R., operated by Superior Portland Cement Co., Superior, O. J. B. Johns, Superior, O., superintendent, and J. S. Brumfield, same place, mine boss. Drift opening to a seam of limestone, 8 feet thick, double entry system, ventilated by a fan. Thirty-two miners and 14 day men employed. This mine was in fairly good condition.

Kelley Lime Mine.

Located at Bartels Sta., O., transportation D. T. & I. R. R. Jno. Burke, Steece, O., operates this mine. Peter Burke, same place, is mine boss. Drift opening into a seam of limestone 6 feet thick, single entry system, natural ventilation, employing 18 miners and 5 day men. December 15th mine found

in poor condition. Working places were not being timbered, and some of the rooms were driven beyond the 60 feet limit without breakthroughs. Ordered all places over 60 feet beyond the last breakthrough stopped. Also ordered the mine boss to have the working places properly timbered.

Black Fork Clay Mine.

Operated by the Black Fork Coal Co., Black Fork, O. W. E. Leonard, same place, superintendent, and Jno. Hanes, mine boss. Drift opening into a seam of fire clay 5 feet thick, double entry system, furnace ventilation, employs 8 miners and 4 day men. Mine in good condition.

Ironton Portland Cement Lime Mine.

Located at Ironton, O., operated by the Ironton Portland Cement Co., Ironton, O. Jno. Lynd, same place, superintendent and mine boss. Fifty miners and 14 day men employed. Single entry system, fan ventilation. May 7th, mine found in poor condition. The air was leaking through the brattice and returning to the outlet before it reached the working places. August 19th, mine in fair condition. Drift into a seam of limestone about 5 feet thick.

Kelley.

Located at Ironton, O., operated by the Kelley Nail & Iron Co., Ironton, O. Conrad Klein, superintendent, Ironton, O.; also mine boss. Drift opening into the No. 5 seam of coal 3 feet thick, single entry system, ventilated by furnace, employs 28 miners and 9 day hands. Mine in fairly good condition.

Ginn.

Located on the D., T. & I. R. R., operated by the Ginn Coal Co., LaGrange, O. H. H. Keyes, Ironton, O., superintendent, and Jno. Beanard, LaGrange, O., mine boss. Drift opening into the No. 5 seam of coal 3 feet thick, single entry system, ventilated by a furnace. Thirty-five miners and 6 day men employed. December 18th, mine in very bad condition, entries being driven over 100 feet without breakthroughs, and ventilation deficient in all parts of the mine. The air shaft, which was located behind the furnace, was almost closed up. Ordered the mine boss to shut the mine down at once, and clean the air course out; also ordered all places driven beyond 60 feet without breakthroughs stopped. December 22nd, mine in an improved condition. The air shaft had been cleaned out and all places over 60 feet without breakthroughs were idle, and the men employed making them at the proper distance.

Lynd.

Situated near Ironton, O., operated by B. F. Lynd, Ironton, O., who is both superintendent and mine boss. Drift opening to the No. 5 seam of coal 28 inches thick, single entry system, natural ventilation, employs 5 miners and 1 day man. Mine in very bad condition. Ordered mine boss to shut the mine down immediately until orders were complied with. The mine was closed down and abandoned.

Pine Grove (Lime).

Located at Hanging Rock, O., and operated by the Hanging Rock Iron Co., Hanging Rock, O. Hugh Shields, Hanging Rock, O., superintendent and

mine boss. Drift into a seam of limestone 6 feet thick, single entry system, ventilated by a furnace, and employs 11 miners and 6 day men. General conditions fair.

Irish Hollow No. 1.

Located at Black Fork, O., on the B. & O. S. W. R. R., operated by the Black Fork Coal Co., Black Fork, O. Wm. Hitchcock, Black Fork, O., is superintendent, and Frank Aberts, same place, mine boss. Drift opening into the No. 5 seam of coal, 3 feet thick, double entry system, ventilated by furnace. Forty-five miners and 10 day men employed. July 30th, mine in poor condition. Advised the superintendent to sink a new air shaft near the head of the first west entry and build a new furnace. Visited November 18th and found in fair condition. A new air shaft had been sunk and a large furnace built.

Irish Hollow No. 2.

Operated by the same company. Drift, No. 5 seam, 3 feet thick, double entry system, ventilated by a furnace. Mine in very poor condition; the air course was almost closed up with slate. Ordered the mine boss to clean out the airway and advised the building of a large furnace. Forty-two miners, 9 day men employed.

Riley Lime Mine.

Located on the D., T. & I. R. R., operated by Mike Riley, Ort, O. Chas. Cable, same place, mine boss. Drift into a seam of limestone 8 feet thick, single entry, natural ventilation, employs 10 miners and 3 day men. Mine in poor condition. Rooms driven 80 and 90 feet wide without any timber being set up. Mine boss was given orders to shut mine down and timber all working places.

Ryan.

Located at Coalgrove, transportation wagon, and operated by B. F. Ryan. Coalgrove, O. Geo. Abbott, same place, mine boss. Drift into No. 5 seam of coal, 3 feet thick, single entry, furnace ventilation and employs 6 miners and 2 day men. Conditions fair at this mine.

Holcomb No. 5.

Located on C., H. & D. R. R., operated by the Buckhorn Coal Co., Ironton, O. A. T. Holcomb, Buckhorn, O., superintendent, and Fred Vermillion, same place, mine boss. Drift, into No. 5 seam of coal, 3 feet thick, single entry, furnace ventilation, employs 31 miners. 9 day men. Mine in good condition.

Sherer.

Situated near Ironton, O., transportation wagon. Operated by Jacob Sherer, Ironton, O. Thos. Hughes, same place, is mine boss. Drift, No. 5 seam, 3 feet thick, single entry, furnace ventilation, employs 5 miners and 1 day hand. Mine in poor condition and has since been abandoned.

Halls.

Located on C., H. & D. R. R., operated by the I. F. Hall Coal Co., Dayton, O. F. W. Brohard, Jep, O., superintendent and mine boss. Drift, No. 6 seam, 3½

feet thick, single entry system, furnace ventilation, employs 40 miners, 9 day men. Mine in fair condition. December 9th, tested scales at this mine and found correct.

Johnson.

Located at Ironton, O., transportation wagon, operated by Russell Johnson. Drift, No. 5 seam, 3 feet thick, single entry system, natural ventilation, employs 8 miners and 1 day man. Conditions fair. New mine and only excavated a short distance. Russell Johnson, superintendent and mine boss.

Fienup No. 5.

Located at Black Fork, O., on the B. & O. S. W. R. R., and operated by the Black Fork Coal Co., Black Fork, O. W. E. Leonard, Black Fork, O., is superintendent, and Jno. Hanes, same place, mine boss. Drift opening into the No. 5 seam of coal, 24 inches thick, double entry system, ventilated by a furnace. Six miners and 4 day men employed. Mine in good condition.

Willard No. 1.

Located on the D., T. & I. R. R., and operated by Thos. McConnell, Steece, O. Chas. Depriest, same place, is mine boss. Drift opening into a seam of lime 5 feet thick, single entry system, ventilated by furnace. Eleven miners and 2 day men employed. Conditions poor at this mine.

Willard No. 2.

Operated by the same company as the No. 1 mine. Wm. Adkins, Steece, O., mine boss. Drift opening into a seam of lime 5 feet thick, single entry system, natural ventilation and employs ten miners and two day hands. Conditions fair.

SCIOTO COUNTY.

Sugar Camp No. 1.

Located on a switch of the B. & O. S. W. R. R., operated by Harbison Walker Co., Pittsburg, Pa. W. A. Spitzer, Portsmouth, O., superintendent and mine boss. Drift, into a seam of fire clay 7 feet thick; single entry system, ventilated by a furnace, and employs 30 miners and 7 day men. Was called to this mine August 6th, to investigate fatal accident which occurred on August 4th, in which Wm. Lane, Jno. Yeley and Frank Clark were seriously burned by an explosion of a keg of powder, the two latter dying from their wounds on August 7th. According to statements made by Lane and others, the accident was due to carelessness on part of Clark, who was said to be drying a squib over the blaze of his lamp; the squib catching fire and in some way ignited the keg of powder, the explosion following with above results.

Buckeye Clay Mine No. 2.

Situated at Scioto Furnace, transportation B. & O. S. W. R. R., operated by the Buckeye F. B. Co., Scioto Furnace, O. A. C. Pyles, same place, superintendent and mine boss. Drift, into a seam of fire clay 4 feet thick, single entry, ventilated by a furnace, employs 9 miners, 3 day men. Conditions fair.

Eifort.

Located on the B. & O. S. W. R. R., operated by Morgan Horton, Eifort, O. W. H. Horton, superintendent, Eifort, O., and E. D. Queen, same place, mine boss. Drift, into a seam of limestone 6 feet thick, single entry, furnace, employs 32 miners, 17 day men. Two inspections made. November 27th, conditions fair, with the exception of the main west entry, where the ventilation was deficient, due to the impaired condition of doors and brattices.

South Webster Clay.

Located at South Webster, O., on the B. & O. S. W. R. R., operated by the South Webster Brick Co., South Webster, O. J. A. Stout, same place, superintendent and mine boss. Drift, into a seam of No. 2 seam of fire clay 5 feet thick, double entry system, furnace ventilation, employs 3 miners and 2 day men. Clay is overlaid with a seam of coal about 12 inches thick, which is worked in connection with the clay, and is used for firing purposes at the brick plant owned by the company and located near the mine. Conditions fair.

Hanging Rock.

Located at Hanging Rock, O., operated by the Hanging Rock Iron Co., Hanging Rock, O. Drift, into a seam of ore 18 inches thick, single entry, ventilated by furnace, employs 8 miners and 4 day men. C. M. Lawless, Hanging Rock, O., superintendent, and Andrew Haas, same place, mine boss. Mine in fair condition.

List of Visits Made in Each County During the Year 1908.

| | |
|----------------------|-------------|
| Jackson County..... | 151 visits. |
| Lawrence County..... | 44 visits |
| Vinton County..... | 17 visits |
| Scioto County..... | 9 visits |
| Athens County..... | 3 visits |
| Meigs County..... | 1 visit |
| Total | 225 visits |

Scales Tested in Jackson County.

Tested scales at the Emma No. 2 mine and found correct.

Lawrence County.

Tested scales at Halls mine and found correct.

Mines Generating Fire Damp (Jackson County).

Superior No. 9, Superior No. 12, Globe Iron Co., and Domestic and Alma No. 2 mines.

SECOND DISTRICT

EDW. KENNEDY.

HOCKING, MEIGS AND A PORTION OF BOTH GALLIA AND VINTON.

Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio:

Dear Sir:—In accordance with the laws of Ohio and the usual custom of the mining department, I have the honor of submitting to you my first annual report of the mines of the second district, for the term beginning June 1, 1908, and ending December 31, 1908.

The second inspection district includes the counties of Hocking, Meigs and a portion of both Vinton and Gallia. One hundred and seventy-five visits were made in the district: 76 in Hocking, 35 in Vinton, 59 in Meigs, and 5 in Gallia. Eight visits were made in Athens County and three visits were also made in Muskingum County, in company with the State Mining Commission.

During the time covered by this report, 12 new mines were opened in the district, 5 remained suspended, and 3 were abandoned.

The permanent improvements covered by this report are as follows: Second openings, 11; fans, 3; furnaces, 8; fire baskets, 2; safety catches, 2, and safety gates, 2. One set of scales was tested and found incorrect.

While always keeping in mind the importance of good ventilation and other sanitary conditions essential to the health of the miners, it has been my highest aim in the discharge of my duties to protect the lives of the men intrusted to my care; yet notwithstanding my many admonitions for watchfulness and care, seven of our craftsmen have met with untimely deaths in the mines of this district during the time covered by this report. Two of the unfortunate accidents occurred in Hocking County and five in Meigs. The following is a list of the mines where the accidents occurred: New Pittsburg No. 5, one; Stalters No. 1, one; Pomeroy Coal Co., two; Charter Oak, one, and Stobarts, two.

Work in this district has been very poor, especially in Vinton and Meigs Counties; such conditions always making it very difficult for the inspector to secure needed improvements. When mines are only working a day or two a week, everything is let go that can be let go; and when the mine inspector seeks to enforce the law, miners who need the work often plead leniency on part of the inspector as earnestly as those in charge of the mines do. Under such circumstances, as long as the life and health of miners is not jeopardized, the inspector is very reluctant to close a mine down.

I regret to say that a great many mines have had very poor supervision. Air courses have been neglected, and as long as a sufficient amount of air was supplied at the face of the working places, little attention was paid the air course as being a necessity for future use. Now that the workings have been extended, the ventilation is very often found deficient at the face of the working places, while the volume of air produced by the fan may be double the quantity necessary to properly ventilate the mines. In some instances where the stoppings were found in bad condition, requested that they be replaced with brick and cement. The management of the mines have informed me of their willingness to build them, but were not willing to have the cost added to the production of coal, when to my knowledge, orders have been given by the heads of the companies to comply with the department's orders in regard to the new laws. It appears the effort to produce cheap coal and establish a reputation for themselves was the prime object of some of the persons in charge of mines, and that the question of the health and welfare of the miners was a secondary consideration.

In conclusion, I desire to state that my relations with both miners and operators have been of the most pleasant character, and the assistance of both in securing better conditions around the mines is fully appreciated. In addition, I desire to thank you for the valuable and timely advice at all times during the year, and the many courtesies shown by yourself and members of the department.

Yours very respectfully,

EDW. KENNEDY, Sand Run, Hocking Co., O.

Inspector 2nd District.

December 31, 1908.

HOCKING COUNTY.

Deweys.

Located in Lost Hollow on the Lost Run branch of the H. V. R. R. Operated by Geo. Price, New Straitsville, O., who is superintendent and mine boss. Drift opening to No. 6 seam of coal, which at this place is about 4 feet thick. New mine, just opened. When visited December 11, 2 miners and 1 day hand were employed driving breakthrough to connect the two openings. Pick mining.

Copperhead.

Located about two miles east of Gore, O., on a branch of the H. V. R. R. Operated by the Hocking Fuel Co., Columbus, Ohio. Thos. McLeish, Columbus, O., superintendent; Isaac Hite, Gore, Ohio, mine boss. Fan ventilation, machine mining, employs 2 cutters, 30 loaders and 9 day hands. July 6th, mine in poor condition, ventilation being deficient. Requested furnace or fan installed, as basket was inadequate to furnish a sufficient amount of air. August 20th, still in poor condition. Granted management two weeks to install fan and drain mine. September 30th, mine idle. December 21st, mine in good condition, except 3rd east entry, which was requested stopped: 90 feet ahead of air. New mine. The old mine was abandoned last spring.

Prosperity.

Located at Sand Run, on the H. V. R. R. Drift opening into the No. 6 seam of coal, 7 feet thick. Double entry system, furnace ventilation. Operated by the Carbon Coal Co., Sand Run, O. B. F. Sheren, Sand Run, O., superintendent and mine foreman. Visited December 7th; employed 7 loaders, 2 cutters and 5 day hands. New mine, equipped with a modern electrical plant. Fan will be installed in the near future. Conditions fair.

Stalters No. 1.

Located at Longstreth, Ohio, on the Monday Branch of the H. V. R. R. Drift opening into the No. 6 seam of coal, 7 feet thick. Operated by the Carbon Hill Mining Co., Carbon Hill, Ohio. Frank Hawk, Carbon Hill, O., superintendent and mine boss. Worked on double entry system, has natural ventilation, employs 7 loaders, 2 cutters and 3 day hands. Visited August 18th, conditions fair. September 21st, found powder being stored in the mine; requested same removed at once. October 17th, was called to investigate the fatal accident of John Laws, who was killed by fall of draw slate at face of second east entry. December 10th, mine in fair condition.

Stalters No. 2.

Located at Longstreth, Ohio, on the Monday Branch of the H. V. R. R. Drift opening into the No. 6 seam of coal, 7 feet thick. Operated by the Big Six Coal Co., Carbon Hill, O. Clarence Smith, same place, superintendent and mine foreman. Visited August 18th, September 21st and December 10th. Six pick miners and 1 day man employed. Mine in fair condition.

Stalters No. 3.

Located at Longstreth, Ohio. Operated by R. Cable, Nelsonville, Ohio, who is superintendent and mine boss. Drift opening into the No. 6 seam of

coal, 7 feet thick. Worked on single entry system. Machine mining and natural ventilation. Employs 5 loaders, 2 cutters and 2 day hands. Visited August 18th, September 21st and December 10th, and found in good condition.

Royal.

Located at Longstreth, O., on the Monday Branch of the H. V. R. R. Operated by the Royal Coal Co., Nelsonville, O. Drift opening into the No. 6 seam of coal, 7 feet thick. Pick mining, single entry system, basket ventilation, 10 pick miners and 2 day hands employed. Visited August 18th and December 9th. Conditions fair.

Union Furnace Clay.

Located at Union Furnace, O., on the river division of the H. V. R. R. Operated by the Columbus Brick & Terra Cotta Co., Union Furnace, O. B. S. Fisher, superintendent; Jas. T. Beckel, mine boss, both of Union Furnace, O. Drift opening into the No. 3 seam of fire clay, 10 feet thick; employs 3 drillers and shooters, 9 loaders and 5 day hands. Worked on double entry system, furnace ventilation. Visited July 3rd and October 23rd. Mine in good condition except trolley wire, which was on the inside of rail; requested same removed to comply with the department's orders.

Kachelmacher Coal.

Located one mile north of Kachelmacher, O., on H. V. R. R. Operated by the Columbus & Hocking Clay & Construction Co., Columbus, O. Wm. Drayton, Kachelmacher, O., superintendent, and Wm. A. Davis, same place, mine boss. Drift opening in No. 6 seam of coal, 6 feet thick, the product to be used at the plant erected at Kachelmacher for the manufacture of brick and fire clay products. Employs 4 pick miners and 2 day hands. Visited November 2nd, found in fair condition.

Kachelmacher Clay.

Located at same place and under same management as coal mine. Drift opening into the No. 4 seam of clay, which is about 6 feet thick, and mined by electric chain machine. Product consumed at the clay plant located at that place. Six loaders and 3 day hands employed. The plant has been operated but very little during the year. Visited November 2nd, and found in good condition.

No. 53.

Located near Buchtel, on the H. V. R. R. Operated by C. & H. C. & I. Co., Columbus, O. John Murday, New Straitsville, O., superintendent; David Keeney, Buchtel, O., mine boss. Slope opening into the No. 6 seam of coal, 5½ feet thick. Ventilated by steam fan, and employs 21 pick miners and 6 day hands. Visited July 22nd, found ventilation deficient; requested mine boss to remove men from the mine immediately. Visited again July 25th, found mine in better condition; permitted miners to go to work. Visited again November 16th, found mine in poor condition, rooms having fallen in from 22 up to 28, cutting the ventilation entirely off. Requested that they brattice up jaws of rooms, reverse fan and break back into rooms as they were headed off. Visited again November 25th and 27th and found mine idle.

Gem.

Located in Lost Hollow on Lost Run branch of the H. V. R. R. Operated by Gem Coal Co., Nelsonville, O. H. B. Summers, Nelsonville, O., superintendent and mine boss. Drift opening into the No. 6 seam of coal, which is from 6 to 10 feet thick. Double entry system, fan ventilation, machine mining. Employs 45 loaders, 2 cutters and 12 day hands. Visited July 6th, August 20th and December 21st; found mine in good condition, except No. 18 room on 1st east. On my last visit, No. 17 had fallen in, closing the breaks up tight. Requested the boss to place check door on entry, close breakthroughs up, and make a breakthrough at face of room, forcing the air to this point.

Black Diamond Coal.

Located near Haydenville, O. Product used at the plant of the National Fire Proofing Co., Pittsburg, Pa. H. S. Snoke, Haydenville, O., superintendent and mine boss. Drift opening into the No. 6 seam of coal, 6 feet thick, furnace ventilation, pick mining, and employs 24 miners and 3 day hands. Visited July 3rd, found mine on strike. Visited again September 18th, found mine in fair condition.

Black Diamond Clay.

Located near Haydenville, owned and operated by same company as coal mine. Henry Snoke, Haydenville, O., superintendent and mine boss. Drift opening into the No. 5 seam of clay, about 7 feet thick; furnace ventilation, and employs 7 miners and 4 day hands. Visited July 3rd and September 18th. Mine idle on both visits.

New Pittsburg No. 1.

Located at New Pittsburg, O., on Brush Fork branch of the H. V. R. R. Operated by the New Pittsburg Coal Co., Columbus, Ohio. Clarence Butts, Blatchford, O., superintendent and mine boss. Drift opening into No. 6 seam of coal, which runs about 6 feet in thickness. Fan ventilation, pick and machine mining, employs 60 pick miners, 80 loaders, 7 cutters and 40 day men. Visited June 27th, conditions fair. August 19th, no air and a large accumulation of black damp. Requested that all men be taken out of mine except those necessary to produce sufficient ventilation. Visited August 21st, found in good condition. Visited October 16th, found ventilation deficient on 3rd east. Fan was moved from 8 east to 3 east, which improved conditions. Requested loose slate taken down on switch, and manholes made on rope road.

New Pittsburg No. 1½.

Located at New Pittsburg, O., on Brush-Fork branch of the H. V. R. R. Operated by the New Pittsburg Coal Co., Columbus, O. Clarence Butts, Blatchford, O., superintendent; Geo. Douglas, same place, mine boss. Drift opening into No. 6 seam of coal, which runs about 7 feet in thickness. Fan ventilation, pick and machine mining, and employs 6 pick miners, 52 loaders, 3 cutters and 11 day men. Visited July 21st, found ventilation deficient on west side. Fan was on the ground for this side of mine, but supplies for same had not been received. Visited August 19th and 21st, found ventilation deficient. Stopped 7 men on 1st west; 2 men on north, and 25 men on 9 east until brattices were built to conduct the air to those points. Visited mine on October 30th, found in good condition.

New Pittsburg No. 2.

Located at New Pittsburg, O., on H. V. R. R. Operated by New Pittsburg Coal Co., Columbus, O. Clarence Butts, Blatchford, Ohio, superintendent; Wm. Lanning, same place, mine boss. Drift opening into the No. 6 seam of coal, 6 feet thick; pick mining, furnace ventilation, and employs 9 miners and 1 day hand. New mine in a small piece of crop coal, and has been suspended the greater part of the year. Visited October 30th, found in good condition.

New Pittsburg No. 2½.

Located one mile west of New Pittsburg, on H. V. R. R. Operated by New Pittsburg Coal Co., Columbus, O. Clarence Butts, Blatchford, O., superintendent; Chas. Briley, same place, mine boss. Drift opening into No. 6 seam of coal, 7 feet thick. Natural ventilation. Leased by the employees from the above-named company; employs 18 pick miners and 3 day hands. October 30th, requested that stack be built on shaft and furnace be built. Suspended from March until September.

New Pittsburg No. 5.

Located at Murray City, O. Operated by New Pittsburg Coal Co., Columbus, O. M. M. Kasler, superintendent, Nelsonville, O.; John Slater, Murray, O., mine boss. Slope opening into No. 6 seam of coal, 6 to 8 feet in thickness; ventilated by three fans; machine mining, 10 pick miners, 192 loaders, 20 cutters and 62 day hands employed. June 16th, found mine in good condition. July 24th, in good condition except on 1 and 2 east on north, where the air was not equally split. While in the mine was called to investigate fatal accident of Clarence Miller, who was killed on 3 east at No. 4 room while running around his trip to get on front end of car, missing his footing and falling under trip. August 1st, had some complaint on north end on the ventilation being foul. The management agreed to build block stoppings on 1 and 2, 3 and 4, and 5 and 6 west entries for the purpose of improving the ventilation. September 1st, requested some loose top timbered at 8 west door, door hung on jaws of 2 east, one on jaws of 3 east, and brattice between No. 1 room on 3 east and north entry, in order to force the air into 1 and 2 east. November 24th and 25th, erected check door on second east at No. 10; top taken down in 25 on second east; No. 36 on 4 east stopped on account of being 116 feet ahead of air, and No. 15 on 5 east stopped on account of being ahead of air.

New Pittsburg No. 7.

Located at Murray City, O. Operated by the New Pittsburg Coal Co., Columbus, O. M. M. Kasler, Nelsonville, O., superintendent; Fred Slater, Murray City, O., mine boss. Drift opening into No. 6 seam of coal, 6 to 8 feet in thickness. Ventilaled by three electric fans; machine mining, 10 pick miners, 310 loaders, 40 cutters and 92 day hands employed. June 17th, conditions were not as good as they should have been, on account of fan being moved and all doors not changed to suit new conditions. July 23rd, found north side in fair condition. September 2nd and 3rd, stopped No. 1 on 3 east and 3 east entry ahead of air. Sent 39 men home on 3 and 4 east and south entries on lower south; no air. Found fall of slate on brattice at jaws of 3 east, cutting the ventilation off of that part of the mine. November 17th and 23rd, south hill was idle on account of scales being broken. Stopped Cal. Spencer place, which was ahead of air, and requested check door on second west between 1 and 2 to

force the air to the face of the rooms, otherwise this portion of the mine was in good condition. The north hill was in poor condition. There was not sufficient air going in the mine for the number of men working. Requested air shaft sunk at head of works and steam fan installed on outside. Four boys not of lawful age were ordered out of the mine. Requested replacing of two brattices on inlet with brick. Management has been transferred to Phil Emmons, Murray City, O.

New Pittsburg No. 8.

Located near Orbiston, O., on the H. V. R. R. Operated by the New Pittsburg Coal Co., Columbus, O. M. M. Kasler, Nelsonville, O., superintendent; John Murphy, same place, mine boss. Slope opening into the No. 6 seam of coal, $5\frac{1}{2}$ feet in thickness; ventilated by steam and electric fans, machine mining, and employs 18 cutters, 175 loaders and 76 day hands. Visited June 18th and 19th, mine in poor condition. Ventilation deficient on all entries on 5 and 6 north, due to one of the generators being broken down, which reduced the electric power by which the fans are propelled. Four men were stopped in 7 and 8 west entries ahead of air. August 3rd, mine was still in poor condition. Gave management two weeks to place the mine in a lawful condition. August 17th, still in poor condition, but the management in charge was doing all in its power to improve the conditions. A shaft had been sunk and necessary changes on inside of mine had been made, but the contractors had not yet gotten the steam fan moved. Time was extended seven days. October 12th and 15th, mine in good condition, except at head of 1 and 2 north, the ventilation was weak, due to some defective doors that had not been reversed to suit new conditions.

New Pittsburg No. 11.

Located at New Pittsburg on H. V. R. R. Operated by the New Pittsburg Coal Co., Columbus, O. Clarence Butts, Blatchford, O., superintendent; Chas. Summers, same place, mine boss. Drift opening into No. 6 seam of coal, 7 feet thick. Furnace ventilation. Leased from above-named company by Summers & Larmer. Employs 20 pick miners and 2 day hands. Visited December 22nd; requested door built on south entry to conduct the air to the men on 1 and 2 west. Suspended almost entire year.

Jobs No. 1, or Beechnut.

Located near Jobs, Ohio, on Brush Fork branch of the H. V. R. R. Operated by Sunday Creek Co., Columbus, O. Jos. Smith, Jobs, O., superintendent; Wm. Morgan, Murray City, O., mine boss. Drift opening into No. 6 seam of coal, about 6 feet thick. Ventilated by fan on one side and furnace on the other. Machine mining and employs 10 cutters, 90 loaders and 31 day hands. June 18th, mine in good condition except on 1 west, where, owing to the faulty nature of the coal, the rooms are driven very irregularly and the same satisfactory results could not be obtained as in other portions of the mine. Stopped rooms Nos. 4 and 6 until breakthroughs were made at face. September 8th, in good condition. December 22nd, in fair condition, except 1 and 2 west, which is affected by door on main south being kept open to permit drivers to pass in and out from the switch, cutting the ventilation off from this part of mine. Requested door on jaws of 2 and 3 west entries and force the air through No. 1 room, which will improve their condition. Stopped No. 4 on 2nd east 84 feet ahead of air. The north hill is just about completed.

Jobs No. 2.

Located at Jobs, O., on Brush Fork branch of the H. V. R. R. Operated by Sunday Creek Co., Columbus, O. Jos. Smith, Jobs, O., superintendent; C. W. Ferrel, Jobs, O., mine boss. Drift opening into No. 6 seam of coal, 5 to 6 feet in thickness. Fan and furnace ventilation, machine and pick mining. Employs 12 pick miners, 19 cutters, 203 loaders and 85 day hands. July 9th and 10th, part of the mine in poor condition, ventilation being deficient on 1 and 2 east, 2 and 3 and 4 west, due to old and decayed doors and brattices, which were ordered replaced with new ones at once. Requested second opening made in west hill at once. October 13th and 14th, mine in fair condition except on 9 and 10 west and 9 and 10 east, where 15 men were drawing entry stumps. The brattices were old and decayed; ordered same repaired at once. December 23rd and 24th, stopped 8 east entry in west hill ahead of air. Ordered south entry of 10 east, which broke into Cawthorne mine, bratticed up. Stopped 3 south entry in Elderberry 75 feet ahead of air, and No. 1 room same place 115 feet ahead of air. General conditions fair.

Jobs No. 3.

Located at Jobs, O., on the Brush Fork branch of the H. V. R. R. Operated by the Sunday Creek Co., Columbus, O. Jos. Smith, Jobs, O., superintendent and mine boss. Drift opening into the No. 6 seam of coal, about 6 feet in thickness. Ventilated by fan. Machine and pick mining, and employs 10 pick miners, 2 cutters, 21 loaders and 6 day hands. Visited July 21st and October 15th, found in good condition.

Snake Hollow No. 207.

Located at Snake Hollow on a branch of the Hocking Valley R. R. Operated by the Sunday Creek Co., Columbus, O. E. W. Dowler, Nelsonville, O., superintendent; Daniel Bateman, same place, mine boss. Drift opening into the No. 6 seam of coal, about 6 feet in thickness. Ventilated by fans, pick and machine mining, 13 pick miners, 12 cutters, 125 loaders and 39 day hands employed. July 8th, mine in fair condition, except 1 and 2 and $\frac{3}{4}$ west in west hill, where there was a squeeze, causing the brattices to leak, which affected the ventilation in this portion of the mine. Stopped No. 22 room on 7 west in north hill 97 feet ahead of air, and requested loose top taken down in 23 on same entry. September 29th, found the squeeze had extended from 1st, 2nd and 3rd west to the 4th and 5th west, shutting off this portion of the mine. Found ventilation deficient on 9 and 10 west in north hill. Requested that 5 new brattices be built on above-named entries. December 8th and 9th, squeeze had extended across to the north hill, shutting off all rooms on 9, 10, 11, 12, 13 and 14 west, and closed second opening for west hill. Requested loose top on 5 east taken down for temporary second opening until the one now under way was completed; also requested fall cleaned up in second opening in north hill, and door replaced on same, as the larger part of the ventilation at this point was being lost.

Sunday Creek No. 4.

Located in Lost Hollow on the Lost Run branch of the H. V. R. R. Operated by the Lost Run Coal Co., New Straitsville, O. John Jones, New Straitsville, O., superintendent and mine boss. Drift opening to No. 6 seam of coal,

which at this place is 7 feet thick. New mine, just opened; when visited December 10, employed 8 loaders and cutters, and 6 day hands. Will install fan in near future. Mine in fair condition.

Starr Nos. 1 and 2.

Located at Coonville on H. V. R. R. Operated by the Starr Hocking Coal Mining Co., Bay City, Michigan. Jos. Winefordner, New Straitsville, O., superintendent and mine boss. Drift opening in No. 6 seam of coal, 4 feet thick. New mine. When visited November 30th, had closed down until new plant was installed and switch built.

Rockquarry.

Located two miles from Nelsonville, O., on branch of the H. V. R. R. Operated by the Nelsonville Coal Co., Nelsonville, O. J. L. Hickman, same place, superintendent; J. H. Joyce, Carbon Hill, O., mine boss. Drift opening into No. 6 seam of coal from 3 to 6 feet in thickness. Machine mining, fan ventilation, employs 12 cutters, 138 loaders and 28 day hands. July 7th, mine in good condition, except breakthroughs are driven very unevenly, owing to the faulty nature of the coal, and the same satisfactory results cannot be obtained as where the coal is natural. September 4th, mine in fair condition. Requested second west driven outside for second opening. November 16th, South Hill in good condition, but the ventilation at new west opening was weak, owing to the temporary furnace which had been installed. Since that date, fan has been received for that side of mine and conditions are satisfactory.

Evans.

Located at Longstreth, O. Small domestic mine, with natural ventilation. Employs 2 pick miners and 1 teamster. Wm. Evans, Carbon Hill, O., superintendent and mine boss.

MEIGS COUNTY.

Logan.

Located at Pomeroy, O. Operated by Martin Ebersbach, Pomeroy, O. Transportation, H. V. R. R. Coal is hauled to the railroad in wagons. Geo. Ebersbach, Pomeroy, O., superintendent; Walter Ebersbach, same place, mine boss. Natural ventilation, employs 8 cutters and loaders and 4 day hands. Visited August 28th and November 11th, and found in good condition.

Buckeye.

Located at Pomeroy, O. Operated by the Buckeye Salt Co., Pomeroy, O. Edw. Weeks, Pomeroy, O., superintendent and mine boss. Drift opening into No. 8 seam of coal, 5 feet thick. Ventilated by furnace, employs 19 pick miners and 5 day hands. The coal is consumed at the salt works. August 7th, found mine in bad condition. Ventilation was poor, and the track was submerged in mud and water. No expense had been put on the mine on account of abandoning it August 15th.

W. D. Powell.

Located one mile west of Middleport, O., on the K. & M. R. R. Coal is hauled to the railroad in wagons. Operated by the Dupre Coal Co., Columbus,

O. W. L. Withee, Middleport, O., superintendent and mine boss. Single entry system, natural ventilation, drift opening, No. 8 seam, 5 feet thick. Employs 10 pick miners and 3 day hands. October 6th, found ventilation weak. Requested furnace installed immediately.

Rockville No. 2 Kings.

Located three miles north of Middleport, O., on the K. & M. R. R. Operated by the Harley Coal Co., Middleport, O. Drift opening into No. 8 seam of coal, about 5 feet thick at this point. Double entry system, fan ventilation. Coal is mined by machines and hauled by motor. Employs 4 cutters, 22 loaders and 12 day hands. Visited June 25th and October 5th, and found in good condition. John Harley, Middleport, O., superintendent and mine boss.

Buckeye Splint No. 1 North.

Located at Rutland, O., on the K. & M. R. R. Operated by Maynard Coal Co., Columbus, O. Jas. H. Davis, Rutland, O., superintendent; Henry Bryant, same place, mine boss. Drift opening into No. 8 seam of coal, 5 feet thick. Furnace ventilation and employs 46 pick miners and 15 day hands. July 15th, found ventilation deficient on 1 and 2 east; ordered men taken out at once. Found there had been fall of slate on inlet, and brattices were down and leaking. July 17th, conditions were improved, but still some leakage, which was ordered remedied. August 27th, requested last room be driven on 1 east outside for inlet of air. October 27th, found mine had a squeeze on, shutting off the east side of mine. Other portions of the mine were in good condition.

Buckeye Splint No. 2 South.

Located at Rutland, O., on the K. & M. R. R. Operated by Maynard Coal Co., Columbus, O. J. H. Davis, Rutland, O., superintendent; Jno. C. Ripley, same place, mine boss. Drift opening into No. 8 seam of coal, 5 feet thick, furnace ventilation, and employs 62 pick miners and 29 day hands. Visited July 15th, found in fair condition. August 27th, ventilation not as good as it should be. The furnace being small and a long way from men and the brattices, which were made of slate, leaking, the ventilation was poor at head of works. Requested 5 west driven outside for inlet, and new furnace built at head of 4 east, which will shorten travel of air about one-half. October 27th, found ventilation still weak, but former requests of August 27th being complied with; furnace not quite completed; when this is accomplished, results will be better.

Dabney.

Located between Middleport and Pomeroy, O., on H. V. R. R. Operated by T. W. Jones, Middleport, O., who is superintendent; Andrew Smith, same place, mine boss. Drift opening into No. 8 seam of coal about 5 feet thick. Ventilated by furnace, employs 8 pick miners and 5 day hands. The output is consumed by the H. V. R. R. for fuel. August 24th and October 29th, found mine in good condition.

Rolling Mill.

Located at Pomeroy, O., on the H. V. R. R. Operated by Martin Ebersbach, Pomeroy, O. Fred Ebersbach, same place, superintendent; Fred G. Jones, Minersville, O., mine boss. Drift opening into No. 8 seam of coal, 4½ feet

thick. Double entry system, ventilated by fan, machine mining, employs 12 cutters, 90 loaders and 31 day hands. Visited August 5th; found ventilation a little weak. Requested management to give brattices a general overhauling and keep breakthroughs open at face of rooms. October 9th, mine was idle repairing hoppers, except some few miners driving entry. Conditions fair. December 29th, ventilation was foul, owing to the discharge from the Charter Oak mine. Requested fan reversed, which will supply the miners with fresh air and improve their condition.

Noble Summit.

Located three miles north of Middleport, O., on the K. & M. R. R. Operated by the Noble-Summit Coal Co., Middleport, O. John Kauff, same place, superintendent and mine boss. Drift opening into the No. 8 seam of coal, 5 feet thick, double entry system, furnace ventilation, employs 25 pick miners and 5 day hands. Visited July 14th and found a squeeze on north side, shutting off all rooms and second opening; requested second opening made out of one of the rooms driving south, otherwise the mine was in fair condition. October 28th, finding my suggestion of July 14th in regard to second opening had not been complied with, requested force reduced to 10 men. Mine has worked but very little during last seven months.

Charter Oak.

Located at Pomeroy, O., transportation Ohio River and H. V. R. R. Operated by Peacock Coal Co., Pomeroy, O. Fred Ebersbach, superintendent; Wm. Ebersbach, mine boss, both of Pomeroy, O. Drift opening into No. 8 seam of coal, 4 feet thick, double entry system, fan ventilation. Coal is mined by machines and hauled by mules and motor. Employs 18 cutters, 100 loaders and 37 day hands. Visited July 16th, conditions fair. July 31st, investigated death of Chas. Jones, machine man, who was killed by fall of slate at face of No. 7 room on 12 west. He had been warned by the man who was working the room to reset posts as they cut over to them that it was dangerous. The warning went unheeded, and he knocked them out and threw them back. It was a bell top that ran down through the face of the coal to the floor. When they cut the 7th run in about 3 feet, they cut the only support it had, resulting in his death. If a little time had been taken and the post reset, the deceased would have probably saved his life. October 8th, condition was fair except on 3 and 4 east, where the ventilation was weak; requested that doors on these entries be repaired and brattices closed up. December 29th, stopped No. 26 on 9 west until breakthrough was finished, out of which they had taken three cuts and abandoned. General conditions good.

Pittsburg.

Located at Minersville, O., operated by the Pittsburg Mining Co., Pomeroy, O. Transportation Ohio River and H. V. R. R. W. H. Miller, Minersville, O., superintendent; Earl Ewing, Syracuse, O., mine boss. Drift opening into No. 8 seam of coal, about 4½ feet thick, double entry system, fan ventilation, coal mined and hauled by electric power, and employs 13 cutters, 72 loaders and 26 day hands. Visited June 24th, found conditions poor on account of insufficient air going in the mine. Requested trip rider or signal placed on rear end of motor trip, and trapper stationed at main door at switch. August 26th, ventilation still poor; requested fan speeded up and advised shaft sunk at head

of works. Ordered top taken down in No. 14 on 3 east and stopped No. 1 on 1st east ahead of air; check door on 1 west to throw the air to face of rooms, and more manholes on motor road. October 7th, ventilation some improved, but not what it should be. Ordered new brattice on 1 west, breakthrough in No. 13 on 3 east, and ladder repaired in second opening. December 30th, ventilation further improved, except on 3 and 4 east, where stoppings were bad and leaking; ordered same repaired at once, breakthroughs kept open at face of rooms and some wire protected that was exposed.

Silver Run.

Located four miles west of Middleport, O., on the C., H. V. & T. R. R. Operated by the Silver Run Coal Co., Middleport, O. W. C. Russell, superintendent; W. H. Snead, mine boss, both of Middleport, O. Drift opening into No. 8 seam of coal, about $4\frac{1}{2}$ feet thick, double entry system, fan ventilation, coal mined by pick and machines; employs 20 pick miners, 2 cutters, 10 loaders and 7 day hands. Visited June 23rd, found mine in good condition, except two men working in an old entry packing canvas to face where there was some black damp. They were driving this through for an airway, and had only two more cuts to go. Visited October 6th; mine was idle. Suspended since August 15th and remained so the balance of year.

Salisbury.

Located three and one-half miles north of Middleport, O. Operated by the Salisbury Coal Co., Toledo, O. John Nash, Middleport, O., superintendent; Jos. Gardner, same place, mine boss. Drift opening into No. 8 seam of coal, about 4 feet thick. Double entry system, fan ventilation. Coal cut by electric power. Mule haulage, 6 cutters, 41 loaders and 15 day hands employed. Visited July 14th; conditions poor on 1 and 2 west and 1 east. Ordered men taken out of east and brattices repaired on west. August 25th, conditions fair. October 28th, stopped No. 5 on 1 south 115 feet ahead of air, otherwise mine in good condition.

Hobson No. 1.

Located near Hobson railroad yards on K. & M. R. R. Operated by the Pomeroy Coal Co., Washington, Pa. A. C. Lattimer, Washington, Pa., superintendent and mine boss. Drift opening into No. 8 seam of coal about $4\frac{1}{2}$ feet thick, double entry system, furnace ventilation, 56 pick miners and 16 day hands employed. June 23rd, in company with Jno. L. McDonald, inspector of 3rd district, investigated fatal accident of A. C. Lattimer, superintendent, who was killed June 20th by fall of slate on the dark west entry 138 feet from face of entry. This mine has had very poor supervision. There was not a door or brattice in the mine, no mode of ventilation, and no respect for the law in regard to the breakthroughs. Ordered men stopped on east, and two men in dark west entry, 156 feet ahead of air; top brushed on main west entries and furnace built. July 16th, A. L. Sheldon had taken charge, with Wm. Gardner as mine boss. Found management had improved the conditions; had built doors and brattices and taken down all loose top, and was building new furnace. August 6th, conditions fair. September 12th, investigated fatal accident of C. H. Williams, who was killed by fall of slate in No. 6 room on second west. The top is very tender, being impossible, in some parts of the mine, to hold it

with timber. Requested loose top taken down at face of second west and jaws of No. 1 room on main dark west. Mine was idle, furnace stack having been burned. November 13th, general conditions fair.

Thomas.

Located on the Ohio River near Racine, O. Operated by Thomas Coal Co., Racine, O. J. W. Thomas, same place, superintendent and mine boss. Shaft opening 112 feet deep, penetrating No. 8 seam of coal, 4 feet 8 inches thick. June 26th, with Jno. L. McDonald, inspector in 3rd district, requested mine stopped until second opening was made. November 9th, allowed entries to be driven to point where second opening is being made. Employs 6 miners and 4 day hands.

Schlaegel Salt.

Located at Pomeroy, O. Operated by the Schlaegel Salt Co., Pomeroy, O. Jas. Schlaegel, Pomeroy, O., superintendent; Wm. Baker, same place, mine boss. Drift opening into No. 8 seam of coal, 4½ feet thick. Coal is mined with pick and consumed at the salt works. Employs 12 miners and 3 day hands; has furnace ventilation, and is worked on single entry system. Visited August 7th, conditions were poor. Requested doors put on jaws of south rooms, and breakthrough cut from No. 1 room to dark entry. November 12th, general conditions good.

Red Bird and Peacock Nos. 1 and 2.

Suspended since March.

SMALL MINES VISITED.

Stobart.

Located at Pomeroy, O., on Carr Run. Visited November 18th, to investigate the fatal accident of Jas. R. Stobart and Albert Young, who were killed by fall of slate in No. 8 room on main west. Employed 3 pick miners. Natural ventilation.

Dyke Mine No. 1.

Located at Pomeroy, O., on Carr Run. Employs 3 pick miners and has natural ventilation. Edw. Weeks, mine boss.

Needs.

Operated by Richard Needs, Pomeroy, O. Located on Carr Run. Two men employed, natural ventilation, pick mine.

Enterprise.

Operated by Geo. Baer, Minersville, O. Four miners and 1 day hand employed. Natural ventilation, pick mine.

Schwegman.

Operated by Buechler & Nichels, Pomeroy, O. Two miners employed, natural ventilation, pick mine.

Dyke No. 2.

Operated by Terrel & Lehw, Pomeroy, O. Two men employed, natural ventilation, pick mine.

Eberfield.

Operated by Geo. Eberfield, Pomeroy, O. Two men employed, natural ventilation, pick mine.

Boss.

Operated by F. M. Boss, Pomeroy, O. Four men, natural ventilation, pick mining.

Folmer.

Operated by John Folmer & Son, Pomeroy, O. Five miners and 1 day hand employed, natural ventilation, pick mining.

Roush No. 1.

Operated by Kaylor & Holter, Pomeroy, O. Two men, natural ventilation, pick mining.

Brechtel Nos. 1 & 2.

Operated by Peter Brechtel, Middleport, O. Located on Storey's Run. Eight miners and 3 day hands employed, natural ventilation, pick mining.

Offler.

Operated by C. Offler & Son, Pomeroy, O. Located on Monkey's Run. Three miners and 1 day hand employed, natural ventilation, pick mining.

Black Diamond.

Operated by Mrs. Rose Lotridge, Pomeroy, O. Two miners and one day hand employed, natural ventilation, pick mining.

Fick.

Operated by Philip Fick, Pomeroy, O. Five miners and one day hand employed, natural ventilation, pick mining.

Kauff Nos. 1 & 2.

Operated by Wm. Kauff, Middleport, O. Ten miners and two day hands employed, natural ventilation, pick mining.

Bowers.

Operated by Geo. Bowers, Pomeroy, O. Six miners and 1 day hand employed, natural ventilation, pick mining.

Edward Bros.

Operated by Edward Bros., Minersville, O. Four miners and 1 day hand employed, natural ventilation, pick mining.

Headley.

Operated by John Headley, Middleport, O. Employs 7 pick miners, 2 day hands and 2 teamsters. Coal consumed at brick plant. Furnace ventilation.

VINTON COUNTY.**Alma Cement Limestone Mine Nos. 1 and 2.**

Located about two miles south of Oreton, O., on the H. V. R. R. Operated by Alma Cement Co., Wellston, O. Wm. Davis, Wellston, O., superintendent; M. C. Dickens, Oreton, O., mine boss. Drift opening into seam of limestone 6 feet thick, double entry system, ventilated by fan and basket. Machine and pick mining. Employs 13 pick miners, 2 cutters, 4 loaders, 12 strippers and 16 day hands. July 1st, mines in fair condition. October 26th, ventilation was foul in No. 2 hill, owing to a door having been torn down; requested same repaired at once.

Alma Lime Nos. 53 and 54.

Located at Oreton, O., on H. V. R. R. Operated by the Alma Cement Co., Wellston, Ohio. Wm. Davis, Wellston, O., superintendent; David Edwards, Oreton, O., mine boss. Drift openings into seam of limestone 7 feet thick, and ventilated from coal mine. Employs 21 pick miners, 2 drillers and 4 day hands. The product is consumed at the Alma Cement factory, Wellston, O. Visited July 1st and October 22nd, found in good condition.

Alma Lime Nos. 55, 56 and 57.

Operated by same company. Drift openings into seam of limestone 7 feet thick. Ventilated by fans, machine and pick mining. Employs 31 miners, 12 cutters and drillers and 14 day hands. Visited June 30th and found door down, making short circuit in air. Ordered same repaired at once. October 21st, mine had been shut down; just starting up, full force of men was not employed. Conditions fair. Wm. Davis, Wellston, O., superintendent; David Eberts, Oreton, O., mine boss.

Alma Coal.

Located at Oreton, O., on H. V. R. R. Operated by Alma Cement Co., Wellston, O. Wm. Davis, Wellston, O., superintendent; Thos. Davis, Oreton, O., mine foreman. Drift opening into No. 4 seam of coal 4 feet thick. Double entry system, employs 12 cutters, 70 loaders and 25 day hands. June 30th, conditions fair. October 21st, stopped room No. 6 on 6 west 92 feet ahead of air, otherwise in good condition. October 26th, tested scales and found them incorrect.

Elk Fork.

Located at Elk Fork on H. V. R. R. Operated by the Elk Fork Coal Co., Elk Fork, O. Shaft opening 95 feet deep, penetrating No. 2 seam of coal, 30 inches thick. Machine and pick mining, fan ventilation, employs 8 cutters, 35 loaders, 20 pick miners and 31 day hands. July 27th, mine idle, conditions fair. September 14th, in good condition. December 14th, requested new gates

placed on shaft and brattices repaired on 5 and 6 west south, otherwise mine in good condition. W. P. Porter, Wellston, O., superintendent; August Ruff, Elk Fork, O., mine foreman.

Tompkins No. 1.

Located at Minerton, O., on the H. V. R. R. Operated by Fobes-Tompkins Coal Co., Columbus, O. Jas. J. Murphy, Minerton, O., superintendent and mine boss. Drift opening into No. 4 seam of coal 4 feet thick, ventilated by steam fan, coal is mined off the solid. Double entry system, 53 pick miners and 13 day hands employed. August 4th, mine in fair condition, except for the practice of miners shooting off the solid, keeping the chambers full of smoke. Requested that shooting hours be established and check doors placed on 1 and 2 west at longest rooms. October 20th, found squeeze on 1 and 2 west, shutting off 26 rooms and both entries, reducing their force more than one-half. The south side of the mine was in good condition.

Raccoon Valley.

Located at Minerton, O., on H. V. R. R. Operated by Jno. L. Lawler, Columbus, O., who is superintendent; E. J. Lawler, Minerton, O., mine foreman. Drift opening into No. 4 seam of coal 4 feet thick. Double entry system, machine mining, fan ventilation, employs 6 cutters, 35 loaders and 14 day hands. Mine in good condition.

Mohr-Minton Nos. 3 and 4.

Located two miles from McArthur, O., on H. V. R. R. Operated by Mohr-Minton Coal Co., Columbus, O. C. B. Wescoat, McArthur, O., superintendent; Wm. Crow, same place, mine foreman. Drift openings into the No. 3 seam of coal 5 feet thick; double entry system, fan ventilation, pick mining and motor haulage; employs 34 miners and 11 day hands. Visited July 28th, mine idle, just getting ready to start. September 15th, on strike for their pay. December 16th, on strike for their pay. Suspended the greater part of the year.

Mohr-Minton Clay.

Located near coal mine, operated by same company. Drift opening into seam of fire clay 12 feet thick. Natural ventilation and employs 4 miners and 1 day hand. Product consumed at Mohr-Minton brick plant.

Outhwaite.

Located at Oretton, O., on the H. V. R. R. Operated by the Oretton Coal Mining Co., Toledo, O. Wm. Andrews, Toledo, superintendent; Jno. A. Newman, Hamden Jct., O., mine foreman. Drift opening into No. 3 seam of coal 3 feet thick, furnace ventilation, machine mining and mule haulage. Double entry system, employs 4 cutters, 16 loaders and 8 day hands. October 22nd, conditions were poor. Mine had been idle six months, brattices were in a settled condition and furnace out of repair; ordered same repaired at once. December 18th, conditions better, but not yet satisfactory. The management agreed to close the mine down and build new furnace, and make all necessary improvements that had been ordered.

Raccoon Valley Nos. 1 and 2.

Located two miles northeast of Zaleski, O., on the B. & O. S. W. R. R. Operated by the Raccoon Valley Coal Co., Columbus, O. B. F. Eddy, Zaleski, O., superintendent and mine boss. Drift opening into No. 4 seam of coal 3 feet thick, pick mining, motor and mule haulage, basket ventilation, double and single entry system. Employs 17 miners and 8 day hands. July 30th, mine was idle, moving plant from old openings up to new ones. September 16th, were ventilating mine with basket, which did not give satisfaction; requested fan installed with as much haste as possible. Mines have been closed down since last visit, having some trouble about the pay. No. 2 has been suspended until trestle is built across hollow and new opening made.

Raccoon Valley No. 3.

Operated by same company. Drift opening into No. 6 seam of coal, $4\frac{1}{2}$ feet thick, double entry system, basket ventilation, employs 8 pick miners and 1 day hand. July 30th, mine idle. September 16th, conditions fair. New mine, B. F. Eddy, Zaleski, O., superintendent and mine boss.

Star No. 2.

Located at Hawks Station, O., on the H. V. R. R. Operated by A. C. Tipton, receiver, Logan, O. O. E. Edwards, Hawks, O., superintendent and mine foreman. Drift opening into No. 4 seam of coal 4 feet thick. Single entry system, furnace ventilation, employs 23 pick miners and 6 day hands. October 20th, ventilation poor at face of rooms; requested check door erected and brattices repaired. December 17th, stopped room No. 2 on first west ahead of air; ordered breakthrough made in same and brattice built in No. 1, otherwise conditions good. Idle from April 1st to some time in September.

Inghams.

Located at Inghams, O., on B. & O. S. W. R. R. Operated by the Valley Coal Co., Dayton, O. E. S. Dempsey, Mineral, Ohio, superintendent; Henry Davis, same place, mine foreman. Double entry system, fan ventilation, machine mining and motor and mule haulage. Drift opening into No. 6 seam of coal 28 inches thick, employs 6 cutters, 18 loaders and 7 day hands. July 29th, mine had been closed down since April 1st. September 17th, mine was in poor condition; had just started up after six months' idleness. Brattices were in a settled condition, ventilation was deficient. Requested fan removed to dark north entry between second and third west entries, top taken down in jaws of No. 7 room on 4 west; stopped 3 east entry 100 feet ahead of air, and ordered brattices and doors repaired with as much dispatch as possible. December 15th, conditions fair.

Brick Yard.

Located near McArthur, O., on the H. V. R. R. Operated by the McArthur Brick Co., McArthur, O. D. A. Martindale, McArthur, O., superintendent; Henry Meadows, same place, mine foreman. Drift opening into No. 4 seam of coal 4 feet thick, furnace ventilation, employs 15 miners and 3 day hands. Output is consumed at McArthur brick plant. July 28th, conditions fair. September 15th, ventilation deficient in 1 and 2 south. Requested larger furnace built.

and second opening made. December 16th, ventilation deficient. Found former orders of September 15th not complied with; took the matter up with the superintendent, and was assured improvements would be made at once.

Clarion.

Suspended since April 1st.

GALLIA COUNTY.

Carl Nos. 1 and 2.

Located near Carlton, O., on the H. V. R. R. Operated by the Dupre Coal Co., Columbus, O. W. D. Edwards, Columbus, superintendent; C. M. Little, Carlton, O., mine foreman. Drift opening into No. 8 seam of coal 4 feet thick, double entry system, furnace and natural ventilation, employs 32 pick miners and 9 day hands. June 22nd, conditions fair in No. 2. Requested that shooting hours be established in No. 1. August 25th, conditions fair. December 1st, condition fair in No. 2, poor in No. 1. Requested double shift on second east until crop line was reached, shaft sunk, furnace built and breakthroughs made in all rooms in this hill.

Jacobs.

Located on Kyger Creek, two and one-half miles from Cheshire, O. Operated by Jacobs & Scott, Cheshire, O. Drift opening into No. 8 seam of coal, 4 feet thick; natural ventilation, employs 6 pick miners and 2 day hands. Coal is hauled to H. V. R. R. at Cheshire in wagons.

Russell.

Located on Kyger Creek, two and one-half miles from Cheshire, O. Operated by Harry Russell, Cheshire, O. Drift opening into No. 8 seam of coal 4 feet thick. Natural ventilation, employs 2 pick miners and 2 day hands. Coal is hauled to H. V. R. R. at Cheshire in wagons.

Swan Creek.

Suspended since last March.

SECOND DISTRICT

JOHN L. McDONALD.

FROM JANUARY 1ST TO JUNE 1ST COMPOSED OF ATHENS, MEIGS,
WASHINGTON AND A PORTION OF NOBLE COUNTIES.

JUNE 1ST CHANGED TO

THIRD DISTRICT

COMPOSED OF ATHENS COUNTY ONLY.

Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio:

Dear Sir:—I herewith submit for your consideration my annual report for the year commencing January 1, 1908, ending December 31, 1908, inclusive.

The year just closed has been one of the poorest, with very few exceptions, in the Hocking Valley coal trade; 1907 was the banner year of the local coal trade. Exceedingly mild weather both at the beginning and the ending of 1908, the business depression and the very limited demand from the Northwest was a combination which showed its effect on the coal business to a marked degree, and conceded by all to be the worst in years.

A three weeks' suspension of work in April on account of the renewal of the wage scale had no effect on the market whatever. Eleven large producing mines remained closed almost the entire year, and the miners had to be taken care of in other mines, making a very slow turn, and reduced the individual earnings of the miners.

The new mining legislation in regard to electric wiring of mines, the handling of explosives, copper tamping tools to be provided by miners and the requirement of substantial stoppings in breakthroughs is fairly well observed, considering the slow work.

The system of wiring provided by law and rules of the department are not only a safeguard to the employes, but a matter of economy to the operator in the saving of wire and power; also the placing of substantial brattices of brick and cement or concrete in breakthroughs is a saving in the cost of mining and providing a good, reliable current of air conducted to the interior of the mine.

More and thorough inspections is the result from the increased number of inspectors provided for in the new laws enacted, which have only been in effect a short time and will, no doubt, result in a noticeable decrease of fatalities if strictly enforced and obeyed.

The mines of this district are operating in the Nos. 6, 7 and 8 seams of coal, varying in thickness from 4 to 7 feet, is mined in the hill tops and at a depth of 450 feet, and are all equipped with mining machinery, rope and motor haulage, except two small shipping mines, and are generally found in good condition, with the exception of some irregularities.

But three fatal accidents occurred in this district during the time covered by this report. The unfortunate victims were: Thos. Marshall, a miner killed by a fall of coal while working down a standing shot in Sunday Creek Company's mine No. 201; Lawrence North, clay miner, killed by flying clay caused by blasting in Nelsonville Clay Mine; James Green, machine man, killed by fall of slate while machine was in operation in Juniper's No. 2 mine.

In response to orders from your office, 17 visits were made outside of my district in company with Mr. Wiper and Mr. Kennedy, newly appointed inspectors, and the Ohio Mining Commission.

Thanking you for advice and ever-ready counsel to promote the interest and general welfare of all concerned, and also for the operators' and miners' co-operation in our efforts to secure better conditions,

Respectfully,

JNO. L. McDONALD, Glouster, Ohio.

Inspector 3rd District.

December 31, 1908.

ATHENS COUNTY.

Sunday Creek Mines.

Note:—D. S. Weitzell, Nelsonville, Ohio, is District Superintendent for Sunday Creek Company in Hocking Valley District; D. H. Williams, of Athens, Ohio, for Sunday Creek Valley; James Pritchard, Hemlock, Ohio, for the four mines; located on Sugar Creek.

S. C. No. 266.

Located on the K. & M. R. R., two miles west of Glouster, Ohio. Operated by the Sunday Creek Co., Columbus, Ohio. Shaft opening to the No. 6 seam is found at a depth of 90 feet, 6 feet in thickness. Worked on the double and triple entry system. A large fan is the ventilating medium. Jno. Collins, Glouster, O., is superintendent and mine boss. Two hundred loaders, 18 machine and 54 day men employed. Inspected mine January 23rd, May 18th, August 18th and November 13th, and found conditions satisfactory, except the breakthroughs between rooms were obstructed with refuse. Requested the matter attended to at once, also air current increased on 5th west territory on account of it being last of air required freshening up.

S. C. No. 281.

Located on a branch of the K. & M. R. R., three miles west of Jacksonville, Ohio. Operated by the Sunday Creek Co., Columbus, Ohio. Shaft opening to the No. 6 seam of coal, 6 feet thick at this point. Worked on the double and triple entry system. Machine mined coal, motor haulage. D. L. Wallace, Glouster, O., superintendent; Wm. Lowry, Modock, Ohio, mine boss; 178 loaders, 16 machine and 60 day men find employment. On January 24th, general condition was good, requested some parts sprayed. May 29th, condition satisfactory, except rooms No. 9 on 2nd east and 23 on 8th west were beyond the limit with breakthroughs. The same were stopped. August 20th and November 24th, found mine in good order.

S. C. No. 255.

Located two and one-half miles southwest of Jacksonville, Ohio, on a branch of the K. & M. R. R. Operated by the Sunday Creek Co., Columbus, O. Robert Snyder, Modock, O., is superintendent; Carl Feirce, of the same place, mine boss. Shaft opening to No. 6 seam, 6 feet thick. Worked on double entry system, fan ventilation. Coal is cut by electric power, motor haulage. Two hundred loaders, 20 machine and 55 day men employed. Inspected mine February 10th, condition good, except the following rooms were beyond the limit without breakthrough: Nos. 1, 7 and 22 on 8th west entry; also 19, 20 and 24 on 7th west entry. Stopped same until breakthrough could be made. Three following inspections were made, May 19th, August 17th and November 16th. Found mine in good order, the law and rules well observed.

S. C. No. 10.

Situated two miles west of Glouster, Ohio, on a branch of the K. & M. R. R. Operated by the Sunday Creek Co., Columbus, Ohio. J. F. Roberts, Derthick,

Ohio, superintendent; Walter Hayden and Buck Redpath, same place, mine bosses. Shaft opening, No. 6 seam, about 6 feet in thickness. Double entry system, ventilated by a large fan. The coal is cut by electric machinery, motor haulage; 208 loaders, 16 machine and 76 day men employed. Inspected February 13th, the old workings and found them well ventilated and free from standing gas. April 22nd, visited the mine on complaint of the men in regard to stairway in the escapement shaft. The matter was taken up with Mr. D. H. Williams, District Superintendent, and on my following visit, May 18th, a new stairway had been completed in the shaft. Inspected south side of mine and found it in good order. July 27th and 29th, inspections were made and conditions found satisfactory. Also October 21st and November 12th, except the electric wiring. Ordered the same given prompt attention.

S. C. No. 256.

Situated at Glouster, Ohio, on the K. & M. R. R. Operated by the Sunday Creek Co., Columbus, Ohio. D. S. Williams, Jacksonville, O., superintendent; Thos. Hope, Glouster, O., mine boss. Shaft opening, No. 6 seam, about 6 feet thick. Double and triple entry system, fan ventilation. The coal is mined by electric power and equipped with motor haulage; 264 loaders, 24 machine and 80 day men employed. February 14th, inspected and found in as good condition as could be expected under the circumstances. Only a small force of men were working on account of the greater part of the mine being still affected by the flood which broke in almost a year previous. March 1st, visited, upon request of management, to assist in exploring some parts where the water had just been removed. Large pockets of gas were found standing on east side of straight south entry. Every precaution was taken to remove the same. No men were allowed in the mine while the work was being done, only the ones necessary to do the work. Visited the mine the following day and found the gas almost all removed, but mine was not in operation. Ordered permanent stoppings built to conduct a safe current to that section of mine. On May 13th, condition throughout the mine was fair, except ventilation on 3, 4, 5 and 6 west entries on account of gob stoppings being in a settled condition. Ordered same given prompt attention. May 22nd, inspected north side of mine which was being reopened for operation. Everything seemed to be in fairly good order. Inspected old works and found them free from standing gas and fairly well ventilated. On July 28th and October 13th and 14th, conditions were satisfactory. Suggested check door between rooms 14 and 15 on 5th west entry and breakthroughs closed.

S. C. No. 267.

Situated three miles northwest of Glouster, O., on a branch of the K. & M. R. R. Operated by the Sunday Creek Co., Columbus, Ohio. Jno. Yaw, Glouster, O., superintendent; Phil Blower, of the same place, mine boss. Slope opening, No. 6 seam, 6 feet in thickness. Double and triple entry system, fan ventilation. The coal is cut by electric power and motor haulage; 177 loaders, 20 machine and 62 day men employed. June 5th, general conditions good. Ordered loose top taken down on motor line at 7 and 8 west. July 30th and October 20th, mine in good order. The mine suspended some time in December.

S. C. No. 201.

Located at Floodwood, Ohio, on the C., H. V. & T. R. R. Operated by the Sunday Creek Co., Columbus, Ohio. Asa Hammond, Nelsonville, O., superin-

tendent; Geo. Nash, Floodwood, mine boss. Shaft opening, No. 6 seam, about 6 feet in thickness. Double and triple entry system, fan ventilation. The coal is cut by electric machinery and equipped with motor haulage; 145 loaders, 10 machine and 50 day men employed. On March 9th, was called to test the scales. One section was found incorrect. Advised the management to have them corrected at once. On March 25th, miners were on strike to have the weigh beam moved back to the old weigh office, contrary to their former demand that it be so constructed so check weighman could see car and chutes. April 23rd, the scales were again tested and found correct. Inspected mine on my former visit, March 25th, and conditions were satisfactory. June 15th, called to investigate the death of Thos. Marshal, who was killed by a fall of bottom coal in room No. 11 on 9th west entry. The deceased was working down a standing shot of coal. A partial examination made of mine and found it in fair order. Inspections were made September 1st and December 29th, and condition found satisfactory.

S. C. No. 203.

Located about three miles southeast of Nelsonville, O., on the C. H. V. & T. R. R. Operated by the Sunday Creek Co., Columbus, Ohio. Frank Murphy, Nelsonville, O., superintendent and mine boss. Drift opening, No. 6 seam, 6 feet thick. Fan ventilation, machine mining and motor haulage; 140 loaders, 10 machine and 35 day men employed. Mine visited May 5th and found idle on account of high water from the Hocking River. No inspection made. June 17th, found the ventilation not sufficient for the number of men employed. Advised the force reduced to correspond with the amount of air. A new opening was begun at once in the north part of the mine for an airway. July 7th, found airway made and fan changed to that point, and was giving good satisfaction. The mine in general was found in fair condition. On September 15th, rooms Nos. 2 on 8th west and 13 and 20 on 5th west were stopped on account of being beyond the limit without breakthroughs. Also requested that the doors and brattices be repaired on 1st west south to increase the current of air. Otherwise the mine was found in fair condition.

S. C. 254.

Located near Jacksonville, O., on the K. & M. R. R. Operated by the Sunday Creek Co., Columbus, Ohio. Dan McBride, Glouster, O., superintendent; Pat McCann, Jacksonville, O., mine boss. Shaft opening, No. 6 seam, 6 feet thick. Double entry system, fan ventilation. Coal is mined by machinery, equipped with rope haulage. Mine remained suspended from January 15th until December 16th. One inspection made, December 14th. Upon request of superintendent, before resuming operation, a thorough inspection was made and mine found in good condition; 250 men generally employed.

S. C. No. 10X.

Situated near Orbiston, O., on the H. V. R. R. Operated by the Sunday Creek Co., Columbus, Ohio. Wm. Bernell, Orbiston, O., superintendent; C. C. Garlic and Roy Easterling, same place, mine bosses. Slope opening, No. 6 seam, 6 feet thick. Double and triple entry system, ventilated by large fan. The coal is mined and hauled by electric power, chain hoist; 165 loaders, 16 machine and 73 day men employed. September 17th and 18th, condition found satisfactory. Advised placing of check door between rooms No. 13 and 14 on 6th east entry. November 19th, found in fair order. The mine was idle the

greater part of the year on account of fire destroying the engine and boiler rooms and machinery. The fire occurred February 7th. Mine resumed operation August 10th.

S. C. No. 209.

Situated on Sugar Creek about four miles north of Athens, Ohio, on a branch of the C., H. V & T. R. R. Operated by the Sunday Creek Co., Columbus, Ohio. Shaft opening, 260 feet deep, No. 6 seam, 4 to 6 feet thick. Double and triple entry system. Fan ventilation, coal is mined with electric machinery, equipped with motor haulage. James Pritchard, Athens, O., superintendent; Wm. Altman, same place, mine boss; 155 loaders, 14 machine and 72 day men employed. Inspected mine September 29th, and general conditions were found fair. The electric wiring was not satisfactory. Mine was equipped with gathering motors and trolley wire taken across the room necks. The management assured me that the wire would be constructed in compliance with the law. Mine was suspended from January 15th until some time in September, and then suspended again the following month and remained so the balance of the year.

S. C. No. 211.

Situated on Sugar Creek about three and one-half miles northeast of Athens, O., on the C., H. V. & T. R. R. Operated by the Sunday Creek Co., Columbus, Ohio. R. M. Mason, Athens, O., superintendent. Was succeeded June 1st by Pearl Barrel, Hemlock, O.; M. Hilton, same place, mine boss. Shaft opening, 240 feet deep, No. 6 seam, about 6 feet thick. Double and triple entry system. Ventilated by a large Capell fan, coal is mined and hauled by electric power; 303 loaders, 26 machine and 116 day men employed. July 2nd and 8th, the mine was inspected and found in fair condition. Ordered check door placed between Rooms Nos. 9 and 10 on 2nd west to conduct air into working places. On September 8th, was called to test scales. Found correct. December 11th and 12th, condition throughout the mine was satisfactory, except electric wiring and breakthroughs between first rooms and air course. Ordered breakthroughs made to provide a more reliable circulation of air at the face of working places; also the wires constructed in a safer manner. This mine is provided with a recording pressure and vacuum gauge on the fan shaft. The recording diagram will show any and all variation in the current at any moment in the day. This is a splendid device and should be at all mines.

S. C. No. 212.

Situated on Sugar Creek about five miles northeast of Athens, O., on the C., H. V. & T. R. R. Operated by the Sunday Creek Co., Columbus, Ohio. Ed. Lynch, Athens, O., superintendent; D. W. Hans, Beaumont, O., mine boss. Shaft, 301 feet deep, No. 6 seam, from 3 to 6 feet thick. Rock comes down in places and almost cuts the coal out. The mine has been opened within the year and is only employing a few men who are developing from the airshaft, on which there is a temporary tippel. No effort is made to install machinery or erect tippel at main shaft. On July 8th, ordered safety catches placed on cage, also some means provided at main shaft for the men to escape in case of emergency, and a more reliable current of air. November 20th, found temporary hoist provided at main shaft and cage at air shaft equipped with safety catches and a good, reliable current of air in circulation. The mine, in general, was found in good condition.

S. C. No. 210.

Located on Sugar Creek, near Athens, Ohio. The mine remained suspended the entire year except from January 1st until the 15th. Also the following mines operated by the Sunday Creek Co., Columbus, Ohio, remained suspended the entire year except from January 1st until the 15th: No. 275, No. 311, No. 312, or McLeish, and Nos. 204 and 205 belonging to the same company remained suspended the entire year. Also No. 252.

Hisylvania No. 23.

Situated at Trimble, Ohio, on the K. & M. R. R. Operated by the Hisylvania Coal Co., Columbus, Ohio. Enoch Blower, Trimble, Ohio, superintendent; Chas. Jonas, Glouster, O., mine boss. Slope opening. No. 6 seam, about 6 feet thick. Double entry system, fan ventilation, coal is cut and hauled by electric power. Employs 110 loaders, 10 machine and 35 day men. January 16th, visited the mine on request of miners to investigate escapement shaft and the way leading to it. Considerable repair work had been done on the shaft, rendering it available and reasonably safe and convenient for egress in case of emergency. The shaft which is used for the intake of air is too small to be obstructed with a stairway, but instead, a good substantial ladder was placed in the shaft. Advised platforms every 8 or 10 feet for resting places. Also the traveling way there repaired and made convenient. Inspections made February 12th, May 4th, July 31st and November 11th, and conditions were perfectly satisfactory. On the last date mentioned, tested a set of railroad scales on request of miners, and found them correct.

New Pittsburgh No. 9.

Located near Beaumont, Ohio, on the H. V. R. R. Operated by the New Pittsburgh Coal Co., Columbus, Ohio. Geo. Butts, Beaumont, O., superintendent; Wm. Souders, same place, mine boss. Shaft opening, No. 6 seam, 6 feet thick. Double and triple entry system, ventilated by fan, coal cut and hauled by electric power; 255 loaders, 18 machine and 59 day men find employment. Inspected mine February 24th, and conditions were satisfactory, also July 14th. On September 10th, visited the mine in company with the State Mining Commission which was making some investigations. November 23rd, found condition excellent, except 1 and 2 east, where the ventilation was not sufficient. Requested a door changed back of motor switch to catch most air.

New Pittsburg No. 10.

Located three miles north of Athens, Ohio, on the C., H. V. & T. R. R. Operated by the New Pittsburg Coal Co., Columbus, Ohio. Frank Knox, general superintendent; Jos. Slater, superintendent and mine boss. Shaft, 171 feet deep, No. 6 seam, about 6 feet thick. Double and triple entry system, ventilated by a large Capell fan, coal cut by electric power and will be equipped with motor haulage when further developed; 125 loaders, 11 machine and 37 day men employed. January 24th, mine was in fair condition. May 6th, found new 14-foot Capell fan installed and giving the best of satisfaction. Also inspections were made on September 4th and December 4th, and conditions throughout the mine were satisfactory.

New York No. 33.

Located near Buchtel, O., on the H. V. R. R. Operated by the New York Coal Co., Columbus, O. P. C. Morris, manager; Ed. Herld, Nelsonville, O., superintendent and mine boss. Drift opening to No. 7 seam of coal, 5 feet thick. Fan ventilation. Coal cut with machinery, and mostly gathered and hauled with motor; 34 loaders, 4 machine and 11 day men employed. March 27th and August 31st, mine was inspected and conditions were found satisfactory.

New York No. 31.

Located at Buchtel, O., on the H. V. R. R. Operated by the New York Coal Co., Columbus, O. P. C. Morris, Nelsonville, O., manager of mines; R. R. Graves, Nelsonville, O., superintendent; E. W. Woody, same place, mine boss. Drift opening, No. 6 seam, 6 feet thick. Double and triple entry system. Ventilated by a large steam fan on the surface and two electric fans located inside as additional means for ventilation. The coal is mined by electric power and motor haulage. Coal is brought on tippie by chain hoist; 230 loaders, 24 machine and 67 day men employed. March 24th, ventilation in north sections of mine was found insufficient on account of a bad line of stoppings between main east. Ordered same repaired at once. On July 22nd, the conditions were not improved and advised men taken out, which was done, until substantial brattices were placed between intake and outlet of air. Visited September 22nd, in company with the Ohio Mining Commission, which was making some inspections of the mines. We were requested by the superintendent to investigate a stopping which was built of an inferior quality of cannel coal blocks and cement. It made a very substantial brattice and was readily approved, and on December 21st, found they were installed between the main east, main north and 3 and 4 south entries, and 20,000 cubic feet of air was the least measurement taken on this visit; and the above amount was taken in sections where we were unable to get a register before the substantial stoppings were erected. The mine generally is found well managed. The miners complained on this visit that the system on which they were to take powder into mine was not satisfactory. The management agreed to make it as safe and convenient as possible and would not ask men to enter mine at an early hour, but not later than 6:30. Considerable credit is due the management at this mine in their manner of approaching an old abandoned mine which was standing full of water. Drill holes were kept far in advance of the distance the machine would cut, both flanking and straight. The water has been safely removed and a part of the mine is in operation.

New York No. 2, or Shaffer.

Situated at old Floodwood, O., on the H. V. R. R. Operated by the New York Coal Co., Columbus, O. E. E. Shaffer, Nelsonville, O., has supervision. Drift opening, No. 6 seam, 4 to 5 feet in thickness. All pillar work. They employ 15 men who work pick and machine work, and 7 day men. On February 3rd, mine suspended. July 17th and December 22nd, found in as good condition as could be expected, owing to the final robbing of pillars and stumps prior to abandonment.

Doanville No. 1.

Located at Myers Crossing on the H. V. R. R. Operated by the Columbus and Hocking Coal and Iron Co., Columbus, Ohio. R. E. McLein, Doanville, O.,

superintendent; Harvey Sines, Buchtel, O., mine boss. Slope opening, No. 6 seam, about 6 feet thick. Double entry system, ventilated by fan, coal cut by electric power, equipped with motor and rope haulage; 20 pick miners, 140 loaders, 10 machine and 50 day men employed. Inspections made February 5th, July 23rd and September 16th, and condition found fairly good under the circumstances. The mine is being rapidly worked out. There is very little solid work, mostly pillars. On November 9th, was called to test a set of railroad scales, which were found weighing correctly. December 30th, conditions found satisfactory except west territory off rock entry on which the ventilation was found deficient. Requested that men be taken out, which was done.

Doanville No. 1A.

Situated at the same place as No. 1. Operated by the same company and supervised by the same management. Drift opening, No. 6 seam, 5 feet thick. Double entry system, fan ventilation. Mine remained suspended the entire year.

Imperial No. 1.

Located near Myers Crossing on the H. V. R. R. Operated by the Imperial Mining Co., Columbus, O. J. A. Murphy, Nelsonville, O., superintendent; W. L. Murphy, same place, mine boss. Drift opening, No. 6 seam, 6 feet thick. Double entry system, ventilated by fan, coal cut by electric power, motor haulage, chain hoist on tippie; 151 loaders, 14 machine and 45 day men employed. March 24th, conditions found satisfactory, except rooms No. 21 and 22 on 8th east which were not sufficiently ventilated. Ordered check placed on entry. September 2nd, found in fair condition.

Juniper No. 2.

Located at Buchtel, O., on the H. V. R. R. Operated by the York Clay and Mining Co., Nelsonville, O. J. J. Menan, Nelsonville, O., superintendent; Geo. McKee, same place, mine boss. Drift opening, No. 6 seam of coal, from 5 to 6 feet in thickness. Ventilated by fan, coal mined and hauled by electric power; 70 loaders, 6 machine and 21 day men employed. February 4th, ordered the stoppings repaired between 5th and 6th east entries to increase the current of air. March 23rd was called to investigate the death of James Green, machine man, who was killed by fall of slate at the face of No. 8 room on 6th east entry. The deceased was shoveling dust while the machine was making a run and a pocket fell out, probably three tons, killing him almost instantly. July 21st, the ventilation in general was insufficient, the furnace being inadequate. Advised a fan installed. September 3rd, found fan in operation and giving good satisfaction. On December 23rd, conditions were satisfactory, except ventilation on 5th east, which was not conducted into working places. Ordered check placed on entry and breakthroughs closed between rooms.

Juniper No. 1.

Located at the same place, operated by the same company, and the same management has supervision. Drift opening, No. 7 seam. Suspended the entire year, except a short time at first of year.

Broadwell.

Situated at Broadwell, O., on the M. C. & C. R. R. Operated by the Federal Coal Co., Marietta, O. D. D. Smith, Broadwell, O., superintendent and

mine boss. Drift opening, No. 8 seam, 4 to 8 feet in thickness. Double entry system, ventilated by fan, coal cut with electric power, rope haulage; 31 loaders, 4 machine and 7 day men employed. Inspections made March 30th, August 24th and November 25th, and found in fair condition.

Schuler.

Located at Sharpsburg, O., on the M. C. & C. R. R. Operated by Jacob Schuler, Sharpsburg, O., who has full supervision. Drift opening, No. 8 seam, 8 feet thick, with 12 inches of gray slate in the center. Double entry system, furnace ventilation, coal mined with machines, horse haulage, let down to tipple by incline; 7 loaders and 3 day men are employed. Inspected mine May 26th, August 26th and December 1st, and on each visit condition found satisfactory.

Black Diamond.

Located three miles east of Amesville, O., on the M., C. & C. R. R. Operated by the Black Diamond Coal and Coke Co., Columbus, O. A. E. Lafferty, Sharpsburg, O., superintendent; Thos. O. Day, mine boss. Drift opening to No. 8 seam, about 8 feet thick with a 16-inch strata of slate in the center. Worked on the double entry system, fan ventilation, coal is mined and hauled by electric power; 32 loaders, 4 machine and 24 day men employed. On May 28th, condition was found satisfactory, except the entry leading to escapement shaft, which was obstructed with water. Also the stairway was unsafe. Requested attention given same at once. August 27th, condition satisfactory.

Wells, or Peacock.

Situated three miles east of Amesville, O., on the M., C. & C. R. R. Operated by the Carbon Coal Mining Co., Marietta, O., under the supervision of Thomas Clark, Amesville, O. Drift opening, No. 8 seam, 8 feet thick, including 16 inches of slate in the center. Double entry system, ventilated by fan, coal cut by electric power. Horse haulage; 30 loaders, 2 machine and 4 day men employed. May 26th, August 26th and December 2nd, found suspended. The tipple was blown down some time in July and the mine was idle on that account until the latter part of the year.

Federal Valley No. 1.

Located at Broadwell, Ohio, on the M., C. & C. R. R. Operated by the Columbus Steam and Furnace Co., Columbus, Ohio. W. T. Moor, Columbus, O., superintendent; J. L. Whittington, Broadwell, O., mine boss. Slope opening, No. 8 seam, 5 feet thick. Double entry system, ventilated by fan, coal cut by electric power, mule haulage; 30 loaders, 2 machine and 4 day men. March 30th, found in bad condition. Haulways were submerged in mud and water, ventilation deficient. Was assured that the mine would be closed down on the following day and improvements made before work was resumed. August 24th and November 25th, suspended.

Northern Fuel No. 24.

Located one mile southwest of Jacksonville, O., on the K. & M. R. R. Operated by the Northern Fuel Co., Columbus, O. Phil Emmons, Jacksonville, O., superintendent, succeeded by Hugh Mallon and he by H. F. Dalrymple.

Thos. Murphy has full supervision at present. Shaft, No. 6 seam, 6 feet thick. Double and triple entry system, ventilated by fan, coal mined and hauled by electric power; 181 loaders, 16 machine and 64 day men employed. May 20th, mine in fair condition. Also August 21st, except the old south, known as Dotty, on which the ventilation was deficient and mixed with considerable black damp. Advised men taken out until properly ventilated. This being done the company concluded to sink an air shaft into that section of the mine. They were permitted to work in the section complained of with about half the regular number of men until the shaft could be completed, which was begun at once. November 25th, was requested to test the scales and found them weighing correctly. October 24th and November 17th, conditions satisfactory. Ventilation was considerably improved by the new air shaft, which was completed and a fan erected on top. The north end of mine was stopped and the men being removed to the old south, or Dotty, territory.

Balley Run.

Situated between Jacksonville and Milfield on the K. & M. R. R. Operated by the Balley Run Coal Co., Toledo, O. Chas. Monsaratt has full supervision. Slope opening, No. 7 seam, $4\frac{1}{2}$ feet thick. New mine and is not developed to any extent. Visited November 18th and found a tippie in process of erection and machinery being installed.

Canaanville.

Situated at Canaanville, O., on the B. & O. S. W. R. R. Operated by the Canaan Coal Co., Canaanville, O. Jno. Kyte, Athens, O., superintendent; P. H. Burns, Glouster, O., mine boss. Shaft opening 450 feet deep, No. 6 seam, 4 to 6 feet thick. Double and triple entry system. Ventilated by Capell fan, coal cut by electric power, equipped with gathering motors. Employs 100 loaders, 14 machine and 66 day men. February 25th and July 9th, found mine in good order. It generates considerable gas, but is well taken care of; no accumulations were found. A good circulation of air is kept at the face of the working places. Visited September 9th in company with foreign experts and the Ohio Mining Commission, also District Inspectors Thos. Waters, of Wellston; Edw. Kennedy, Sand Run, and Wm. Wiper, Zanesville. December 17th, condition found satisfactory, except the breakthroughs between rooms were obstructed with gob, which prevented a free circulation of air through the working places. Ordered the matter attended to at once.

Eclipse No. 3.

Located three miles northwest of Athens, O., on the H. V. R. R. Operated by the Johnson Coal Mining Co., Columbus, O. John Taylor, Athens, O., superintendent; John Brewer, Hocking, O., mine boss. Shaft, 187 feet deep, No. 6 seam, about 6 feet in thickness at that point. Worked on double and triple entry system, ventilated by fan, coal cut by electric power, equipped with motor haulage; 190 loaders, 20 machine and 70 day men employed. April 28th, visited mine in company with Mr. James Pritchard, Inspector third district, and Mr. Jas. Haughee and Mr. Perry, powder agents for the Pelee powder, a new brand which is presumed to be smokeless and flameless. Several tests were made by drilling and blasting the coal, and in my opinion, it is not an improvement over the black powder in safety or any other particular. June 19th, conditions

were found fair. July 3rd, partial inspection made and found in fair order. September 10th, visited in company with the Mining Commission. On October 15th, conditions were satisfactory.

Hocking, or Moor.

Situated near Carbondale, O., on a branch of the B. & O. S. W. Operated by the Hocking Mining Co., Athens, O. G. W. Arnold, Carbondale, O., superintendent; James Gascoyne, same place, mine boss. Slope opening, No. 6 seam, $4\frac{1}{2}$ feet thick. Double entry system, ventilated by fan, coal cut by electric power, equipped with gathering and haulage motor, also rope; 140 loaders, 16 machine and 51 day men employed. Inspections were made July 15th and December 8th, and found in excellent condition.

Winchester.

Located near Carbondale, O., on a branch of the B. & O. S. W. R. R. Slope opening, No. 6 seam. Operated by the Winchester Coal Mining Co., Dayton, O. J. P. Wood, Athens, O., receiver. The mine remained suspended the entire year. Visited July 15th and December 8th. On the last date found the mine being reopened for operation. R. M. Mason, Athens, O., has supervision.

Carbondale No. 3.

Situated at Carbondale, O., on the Mineral branch of the B. & O. S. W. R. R. Operated by the Carbondale Coal Co., Carbondale, O. M. H. Doolittle, Carbondale, O., superintendent; Jacob Pollock, same place, mine boss. Drift, No. 6 seam 5 feet in thickness. Ventiladed by fan, coal mined and hauled by electric power; 75 loaders, 8 machine and 30 day men employed. July 16th, condition throughout the mine was satisfactory, except on 1 and 2 west entry where ventilation was deficient, due to the aircourse being closed in. Requested that the men be taken out. December 9th, found mine in fair order.

Carbondale No. 2.

Situated one-half mile northwest of No. 3. Operated by the same company and under the same management, except Ford Doolittle, Carbondale, O., mine boss. Slope, No. 6 seam, about $4\frac{1}{2}$ feet thick. Ventiladed by fan, coal cut by electric power, motor haulage; 87 loaders, 8 machine and 28 day men employed. June 18th, inspected the mine in company with Chief Inspector Harrison, who was requested by one of the committee to make the inspection. Found mine in good order and approved by the chief, except ventilation on 5 and 6 west entries, being the last on the return; ordered same increased. On December 10th, conditions throughout the mine found satisfactory.

Luhrig Nos. 1, 2 and 3.

Located five miles west of Athens, O., on the B. & O. S. W. R. R. Operated by the Luhrig Coal Co., Cincinnati, O. Sherman Schull, Luhrig, O., superintendent; Jno. Gibbs, Luhrig, O., mine boss Nos. 1 and 2; Jno. Hamelton, Marshfield, O., mine boss No. 3 side. Double shaft opening, No. 6 seam, 5 to 8 feet thick. Double entry system, ventilated by fan, coal mined by electric power, equipped with motor haulage; 200 loaders, 18 machine and 87 day men employed on No. 1 and 2 side; 140 loaders, 12 machine and 65 day men employed

on No. 3 side, or the south side of No. 2. January 28th and 29th, mine found in good order except ordered room No. 23 on 18th west stopped on account of dangerous conditions. February 21st, inspected old works and found them free of standing gas and fairly well ventilated. July 20th, found in good order. September 11th, visited in company with the Ohio Mining Commission, which was making some inspections before recommending laws. October 9th, condition found satisfactory. The last three visits were made on No. 1 and 2 side, the following on No. 3: June 30th and October 5th and 6th. Condition fair except some black damp coming from 8th east. Ordered same removed by forcing a current of air through the old works.

Sedalia No. 14.

Located at Glouster, O., on the K. & M. R. R. Operated by S. F. L. Dean, Columbus, O., receiver for the Glouster Coal Co. David Cook, Corning, O., superintendent and mine boss. Slope opening, No. 7 seam, 4 feet thick. Ventilated by fan, coal mined by machines, mule haulage. Employs 20 loaders, 2 machine and 15 day men. August 19th and November 2nd, inspections made and condition fair. Suspended the greater part of the year.

Silcott.

Located at Floodwood, O., on the H. V. R. R. Operated by Geo. Silcott, Nelsonville, O. O. N. Reynolds, Floodwood, O., has supervision. Drift openings, No. 6 seam. Furnace and natural ventilation, coal mined by picks, mule haulage; 18 miners and 9 day men are employed. February 3rd and December 22nd, conditions fair, considering the final robbing of pillars prior to abandonment. The men are working near the crop and have plenty of openings, which gives a good circulation of air.

Maple Hill.

Located about three miles northeast of Nelsonville, O. Operated by the Maple Mining Co., Nelsonville, O., formerly the Maple Hill Coal Co., or W. J. Hamelton. Robert Eddy, Nelsonville, O., has supervision. The mine remained suspended except the last month of the year, when the new company began to reopen the mine for operation. Mine is almost exhausted; pillars and stumps will be the extent of their work. Two visits made and found suspended on both occasions.

C. L. Poston No. 65.

Located at Nelsonville, O., on the H. V. R. R. Operated by J. M. Lama, Nelsonville, O. Mr. Lama has full supervision. Drift opening, No. 6 seam, 6 feet thick. Natural ventilation; 5 day men and 16 pick miners employed drawing stumps and pillars. Visited January 31st, to get statistical report for 1907. Mine was idle. On February 6th, made inspection and found conditions as good as could be expected under the circumstances. Miners were working near the crop in several different openings. Had good escape and fair circulation of air.

SMALL MINES EMPLOYING LESS THAN TEN—(Athens County).**Edgel and Young.**

Located at Nelsonville, O. Employs 9 men, who furnish coal for the Nelsonville Brick Co. Operated by Edgel and Young, Nelsonville, O. Machine mine, mule haulage. Visited August 3rd and December 28th, and found in fair condition.

Pigskin.

Located at the same place. Operated by T. S. Roser, Nelsonville, O. The Nelsonville Sewer Pipe Company consumes the output. Nine men employed. Coal mined by electric power, power being furnished by the Sewer Pipe Co. December 28th, found the mine in fair condition.

Glouster Domestic.

Situated at Glouster, O. Operated by Sydney Hilditch, Glouster, O. Shaft opening, No. 7 seam, 4 feet thick. Two shafts were sunk only 30 feet apart, but were not connected on November 18th when visited. Ordered another opening not less than 100 feet from main shaft, which was begun at once.

CLAY MINES—(Athens County).

Nelsonville New.

Located at Nelsonville, O., on the H. V. R. R. Operated by the Nelsonville Brick Co., Nelsonville, O. Chas. Edington, Nelsonville, O., has supervision. Drift opening, No. 5 seam of clay, from 8 to 11 feet thick. Natural ventilation. Employs 18 miners and 6 day men. August 3rd and December 28th, found mine in good order.

Nelsonville Clay.

Located at Nelsonville, O., on the H. V. R. R. Operated by the Nelsonville Sewer Pipe Co., Nelsonville, O. Joe Rosco, Nelsonville, O., has supervision. Drift opening, No. 5 seam of clay, 8 to 10 feet thick. Ventilated by natural current; mine has been equipped with motor haulage; 15 miners, 8 day men are employed. August 3rd, was called to investigate the death of Lawrence North, a miner, who was killed by flying clay caused by a shot. Deceased was working with his father and had four holes charged, lighted two, and when they went off they went back to light the others, when one went off. December 28th, conditions were found satisfactory.

MEIGS COUNTY.**Buckeye.**

Located at Pomeroy, O. Operated by the Buckeye Salt Co., Pomeroy, O., under the supervision of Ed. Weeks, Pomeroy, O. Drift opening, No. 8 seam,

4½ feet thick. Furnace ventilation; 18 pick miners and 8 day men are employed to supply the salt works. On March 10th, the mine was found in fair condition.

Maynard Bros.' North and South Mines.

Located at Rutland. Operated by the Maynard Coal Co., Columbus, O. James Davis, Rutland, O., has supervision. Drift opening, No. 8 seam, about 5 feet thick. Furnace ventilation, coal mined with picks. Two openings, north and south hill. Coal is brought over the same tippie. Fifty-two miners and 16 day men employed in north hill; 59 miners and 21 day men employed in south hill. On March 11th, mines were found in fair order.

Peacock.

Located at Pomeroy, O., on the Ohio River. Operated by Bengel Bros. Mining Co., Pomeroy, O. H. V. Carl, Pomeroy, O., superintendent. Drift opening, No. 8 seam, 5 feet thick. Ventilated by furnace, coal cut by electric power, rope and locomotive haulage; 14 loaders, 6 machine and 8 day men employed. March 13th, they were working a small force of men cleaning up the mine which was in bad condition, due to long idleness, which caused a squeeze. The mine is almost out of commission. Apparently there was no danger in the construction work going on when the inspection was made.

Pittsburg.

Situated at Minersville, O. Operated by the Pittsburg Mining Co., Pomeroy, O. W. W. Miller, Pomeroy, superintendent; E. Ewing, same place, mine boss. Transportation on the Ohio River and H. V. R. R. Drift opening, No. 8 seam, 4½ feet thick. Fan ventilation, coal is mined and hauled by electric power. Employs 68 loaders, 14 machine and 27 day men. On March 12th, mine was found in poor condition on account of being flooded, only part being in operation. A force of men was working to restore the mine to its normal condition. June 24th, visited mine on complaint of miners in regard to ventilation. Inspection was made in company with Edw. Kennedy, who had been appointed June 1st and assigned to this county. Ordered check doors placed between rooms Nos. 3 and 4 and 9 and 10 on 1st east to force a current of air to the face of working places; also breakthroughs cleaned out between rooms. Otherwise conditions were satisfactory.

Silver Run.

Located four miles southwest of Middleport, O., on the H. V. R. R. Operated by the Silver Run Coal Co., Middleport, O. W. C. Russell, Middleport, O., superintendent; W. H. Sneed, same place, mine boss. Drift opening, No. 3 seam, 4½ feet thick. Ventilated by fan, coal mined and hauled by electric power; 30 miners, 2 machine and 11 day men employed. Visited mine June 23rd in company with Edw. Kennedy, who had been assigned to this district, and found in fair order.

Rockville, or Hisylvania.

Located about three miles north of Middleport, O., on the K. & M. R. R. Operated by the Harley Coal Co., Middleport, O. Jno. Harley, Middleport, O.,

superintendent and mine boss. Drift opening, No. 8 seam, 4 feet thick. Fan ventilation, coal mined and hauled by electric power; 42 loaders, 6 machines and 14 day men employed. On June 25th, found in fair condition.

Hobson.

Located at Hobson, one mile west of Middleport, O., on the K. & M. R. R. Operated by the Pomeroy Coal Co. Drift opening, No. 8 seam, $4\frac{1}{2}$ feet thick. Pick mine, employs 32 miners and 8 day men. Mine has been under the supervision of A. C. Latimer, of Middleport, O., until June 19th, when he met his death by a fall of slate on the dark east entry. The deceased was showing some men places to start work when killed. The mine was in a dangerous condition and very poorly managed. Investigation was made in company with Edw. Kennedy, Inspector, who was taking charge of the district in which this mine is situated. Mine was idle when the inspection was made. Orders were given to have the mine placed in a safe and lawful condition. This is a new property just opened recently, and not developed to any extent.

GALLIA COUNTY.

Carl No. 1 and 2.

Located at Carlton, O., on the H. V. R. R. Operated by the Minshall Coal Mining Co., Columbus, O. W. D. Edwards, Columbus, O., superintendent; C. M. Little, Carlton, O., mine boss. Drift opening, No. 8 seam, 4 feet thick. Fan ventilation. Pick mine, employs 13 miners and 5 day men. June 23rd, found in fair condition.

The Following Mines Were Visited in Company With the Ohio Mining Commission Outside of My District.

| | | |
|-----------------------|-------------------------------|-------------|
| Hocking County..... | New Pittsburg No. 7..... | Sept. 22nd. |
| Muskingum County..... | Maynard No. 38..... | Sept. 24th. |
| Morgan County..... | Rose and Tropic Mines..... | Sept. 25th. |
| Jackson County..... | Grace and Superior No. 9..... | Oct. 7th. |
| Jackson County..... | Superior No. 3..... | Oct. 8th. |

THIRD DISTRICT

JAS. PRITCHARD.

COMPOSED OF THE COUNTIES OF HOCKING, MORGAN, MUSKINGUM
AND PERRY.

Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio:

Dear Sir:—In accordance with a time-honored custom I herewith submit my fourth annual report of the Third Mining District for the year commencing January 1, 1908, until July 31, 1908, the date of my retirement from the Department.

With the exception of the months of April and May, work at the mines was fairly good during the period covered by this report. In the Crooksville district the inability of the operators and miners to reach an amicable agreement on the dead work scale resulted in the loss of several months' work to quite a number of mines in that district.

The improvements made in the district will, no doubt, be reported by my successor, to whose credit they should be placed.

I regret to report four fatal accidents that have occurred during the seven months embraced by this report. Three are credited to Perry County and one to Hocking, which was part of the Third Mining District when the accident occurred. One was caused by fall of slate, one by a fall of coal in breakthrough, one by fall of roof and one by the fall of a gin pole while raising a boiler stack.

Little trouble has been experienced throughout the district in enforcing the rules, due largely to the friendly co-operation of both miners and operators to obtain the best conditions at all mines where circumstances would permit.

In the Cannelville District much anxiety and apprehension was caused by the practice of solid shooting, in many instances men getting severely burned while firing their shots. As a rule, miners fired their shots in rotation, commencing with the first man on the return airway and continuing in succession until it reached the last man on the inlet. In some of the mines this resulted in part of the men having to remain in the mine until as late as ten o'clock at night; while others would go home and return after supper to prepare and fire their shots at that time.

With one exception the mines were all ventilated by furnaces, and the volume of smoke was so great after the first hour of firing that it was with difficulty some of the men could find their way out of the mines. On July 16th, I suggested that shot firers be employed at all mines employing more than twenty men, the miners agreeing to bear half the expense; and the following day the Pan-American mine started under those conditions. A few days later, at Zanesville, a mutual understanding was arrived at by which all the companies agreed to adopt this policy.

On account of leaving the department two weeks later, I am unable to report the results obtained by this arrangement, but no doubt Mr. Wiper will detail the results in submitting his report covering the remainder of the year for the district.

The mine fires raging around Shawnee and New Straitsville have given little trouble during this year and most of the mines, seriously affected last year, are now or have successfully drawn the pillars and other working places, and the work of confining the fires to their present locations is being continued to prevent adjacent properties from being endangered.

In conclusion, I desire to state that it was with reluctance and regret which necessitated the severing of my relations with the Department and its members, with whom I have enjoyed such friendly relations, but the policy of the state in the matter of remuneration for its inspectors leaves no other alternative for those of its members who are offered better rewards for no more responsible positions or occupations.

My relations with both miners and operators have been of the most pleasant character, and anything that may have been accomplished during my in-

cumbency of the office has been done through kindly co-operation of both, and with the timely and valuable advice given by yourself upon all occasions.

In addition, I desire to express to you, and through you to all members of the Department, my sincere thanks for the many favors shown and courtesies extended during my official relations with the Department.

Very respectfully yours,

JAMES PRITCHARD, Hemlock, Ohio.

July 31, 1908.

Inspector Third District.

MORGAN COUNTY.

Rose.

Located near Tropic Station on the Z. & W. R. R. Operated by the Carding Coal Co., Columbus, O. Geo. Carding, Rose Farm, O., is superintendent; Geo. Lamb, Jr., same place, mine boss. Drift opening, No. 6 seam of coal, about 4 feet thick. Fan ventilation, machine mining, and employs 10 machine men, 60 loaders and 32 day men. Visited May 13th, and found in fair condition, except in the south entries, where ventilation was weak on account of a block of coal being taken out prior to abandoning that side of the mine, when the south opening can be used for the main inlet, improving the ventilation throughout all sections of the mine. A new escapement-way will also be made on the north side of the mine as soon as north entries can be driven a short distance farther.

MUSKINGUM COUNTY.

Dewey.

Located on Duncan Run near Sealover Station on the O. & L. K. R. R. Operated by the Duncan Run Coal Mining Co., Detroit, Mich. Chas. McPeck, superintendent and mine boss. Pick mining and employs 18 miners and 6 day hands. Visited February 22nd, and found the mine was not provided with a lawful second opening, and reduced the force to 10 men until one was made. Again visited July 22nd, and found former request complied with and the mine in good condition.

Granger.

Located near Buckeye Station on the O. & L. K. division of the B. & O. R. R. Operated by R. T. Price Coal Co., Cleveland, O. R. T. Price, Cleveland, O., superintendent; J. H. Moorefield, Zanesville, mine boss. Drift opening, No. 6 seam, about 4 feet thick. Fan ventilation, machine mining, and employs 8 machine men, 32 loaders and 15 day men. Visited February 26th, and found in good condition, except the escapement had been partially destroyed by falls; and requested that either the falls be cleaned up or a new entry driven out to the crop line for second opening. A new fan had been installed since my former visits, and giving general satisfaction.

Abels.

Located about one mile southwest of Buckeye Station on the Cannelville branch of the Z. & W. R. R. Operated by the Muskingum Coal & R. R. Co., Zanesville, O. L. D. Abel, Zanesville, superintendent; Enos Miller, South Zanesville, mine boss. Drift, No. 6 seam, about 3½ feet thick. Fan ventilation, machine mining, and employs 12 machine men, 71 loaders and 22 day men. Visited February 24th and found the mine in good condition, except breakthroughs between rooms were being gobbled up, and insisted that this practice be discontinued. Visited again May 28th, and breakthroughs in better condition. Requested that a curtain on the main south be replaced by a door and that the electric wire be taken off the ground and hung up on insulators. Ventilation good throughout the mine.

Elk.

Located near Roseville, O., on the C. & M. V. R. R. Operated by the Elk Coal Co., Columbus, O. S. E. Ranney, Roseville, O., superintendent; Geo. W. Davis, Zanesville, O., mine boss. Drift, No. 6 seam, about 3 feet 8 inches thick. Fan ventilation, machine mining and employs 12 machine men, 48 loaders and 17 day men. March 12th, found in poor condition; requested fan moved either to the outlet or inlet of the mine on account of the leaks in the brattices, permitting a short circuit of the air. Visited again June 25th and found the changes made and mine in good condition, but requested that motor door on main west entry be moved about 30 feet east to shut off leakage from old works. Visited July 23rd, to investigate the charge of taking in powder while electric wires were charged, and made arrangements to have the same discontinued. Mine on this visit found in good condition.

No. 16.

Located at Cannelville on the Cannelville branch of the Z. & W. R. R. Operated by the Fobes Tompkins Coal Co., Columbus, O. John Leach, Dillon, O., superintendent; J. H. Powel, same place, mine boss. Drift, No. 7 seam, about 4 feet thick. Considered pick mining, but shooting off the solid is the prevailing practice. Visited twice during the year. On first visit, mine found deficient in ventilation and men taken out until conditions were improved. July 17th, ventilation was slightly improved, and requested that a new air-course be driven to the furnace. This mine is nearing exhaustion. Sixteen miners and 7 day hands employed.

Neal.

Located near mine No. 16 and on the same branch of the Z. & W. R. R. Slope opening 200 feet long, No. 6 seam of coal, which runs about 4 feet in thickness. Operated by the Boyd Coal and Mining Co., Dillon, O. J. A. McGarvey, superintendent, and Allen Neal, mine boss, both of Dillon. Coal mined by solid shooting and ventilated by furnace. Employs 15 miners and 6 day hands. July 17th, mine found in good condition, but suggested that shot firers be employed to fire the shots as at the other mines, which was agreed to by the management.

Pan-American.

Located near Cannelville on the Cannelville branch of the Z. & W. R. R. Operated by the Pan-American Coal Co., Newark, O. Drift, No. 6 seam, which runs about 4 feet in thickness. Chas. Anderson, Dillon, O., superintendent and mine boss. Coal mined by solid shooting, 45 miners and 11 day hands employed. July 16th, found the mine idle on account of deficient ventilation; requested mine put in proper condition before work was resumed. A new fan has been erected and will soon be ready for use, and by agreement that portion of the mine where sufficient air was found was permitted to work until fan was ready to be started, it being mutually understood that in future shot firers be employed to fire the shots. This mine is a long way in, and the number of men employed makes it exceedingly dangerous for men to continue the present system.

SMALL MINES VISITED IN MUSKINGUM COUNTY.

Cedar Run, or Patterson.

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Located on Cedar Run, on the O. & L. K. division of the B. & O. R. R.
owned by the Brewitt A. Patterson Coal Co., Malta, O. Shaft, 36 feet deep,
No. 4 seam, about 4 feet thick. Visited mine to inquire about the escapement
shaft and found operation suspended, with no prospects for an early resumption.

Dipsy Grove.

Located three miles north of Zanesville at Kings siding on the C. & M.
V. R. R. Operated by the W. A. Werner Coal Co., Zanesville. Elmer Booth
Zanesville, superintendent. Wm. Salmon, Gilbert, O., mine boss. Drift opening
No. 6 seam of coal, about 2½ feet thick. Natural ventilation, pick mining, and
employs 18 miners and 3 day hands. Visited March 8th and found ventilation
deficient and no second opening, and closed down the mine until both air and
escapementway were provided.

Moorehead.

Located two miles east of Zanesville on the Marietta Road, and operated
by the W. A. Werner Coal Co., Zanesville, O. Elmer Booth, Zanesville, O.
superintendent and mine boss. Drift, No. 6 seam, which averages about 2¼
feet in thickness. Furnace ventilation, pick mining, and employs 18 miners
and 3 day hands. Visited March 7th, and found ventilation deficient, and shut
down the mine until some provision was made to secure a proper ventilating
medium. Visited again May 27th, and found Chas. Huey in charge, but no im-
provement from first visit, and insisted that mine remain idle until properly
ventilated and a safe escapementway provided.

HOCKING COUNTY.

Cawthorne No. 6.

Located near Monday, O., on the Monday Creek branch of the H. V. R. R.
Operated by the New Pittsburg Coal Co., Columbus, O. G. C. Weitzel, Nelson
ville, O., superintendent, and John Slater, Monday, O., mine boss. Drift open-
ing, No. 6 seam about 6 feet thick. Ventilated by electric fans and has, when
in operation, both pick and machine mining. Visited this mine with District
inspectors Morrison and Jones, January 24th, to assist them in making an
investigation of the dangerous conditions existing in this mine west of what
is known as the Big Clay Vein, which had previously been examined and re-
ported on by the chief and other district inspectors of the Department. No
effort is being made at present to operate the mine, owing to the action taken
by the inspectors and the miners in relation to that part of the mine affected
by the dangers above mentioned.

New Pittsburg No. 7.

Located near Murray City on the Brush Fork branch of the Hocking Val-
ley R. R. Operated by the New Pittsburg Coal Co., Columbus, O. G. C. Weitzel

Nelsonville, O., superintendent; M. M. Kassler, same place, mine boss. Drift, No. 6 seam, which at this place is from 6 to 8 feet thick. Ventilated by three fans, machine mining and employs 310 loaders, 28 machine men and 126 day hands. Visited this mine February 10th and 11th, and found in good condition, except the travellingway, which required some repairs. Again visited with Inspector Kennedy June 17th, and found mine in good condition, but still needing repairs on travelingway.

New Pittsburg Equator No. 8.

Located near Orbiston on the Brush Fork branch of the H. V. R. R. Operated by the New Pittsburg Coal Co., Columbus, O. G. C. Weitzel, Nelsonville, O., superintendent; John Murphy, same place, mine boss. Slope opening, No. 6 seam, about 5½ feet thick. Ventilated by two fans, machine mining, and employs 195 loaders, 2 pick miners, 14 cutters and 36 day men. Visited with District Inspector Kennedy June 15th. The mine had just broken into the No. 6, or Cawthorne works, and ventilating plans had not been completed at that time and ventilation on 3rd and 4th east entries was weak. As soon as proper arrangements can be made, this defect will no doubt speedily be remedied.

New Pittsburg No. 5.

Located at Murray City, O., and operated by the New Pittsburg Coal Co., Columbus, O. G. C. Weitzel, Nelsonville, O., superintendent; John Slater, Murray City, O., mine boss. Slope opening, No. 6 seam of coal, about 6 feet thick. Ventilated by two electric and one steam fans; machine mining, and employs 194 loaders, 12 pick miners, 20 machine and 62 day men. February 12th and 13th, mine was found in good condition. A large new Buffalo fan having been erected on the outside, is furnishing splendid ventilation in connection with the two electric fans inside. Again visited June 16th, and found the mine in its usual good condition. Accompanied on the last visit by Inspector Kennedy, of the new district.

Jobs No. 1, or Beech Nut.

Located near Jobs, O., on the Brush Fork branch of the Hocking Valley R. R. Operated by the Sunday Creek Co., Columbus, O. Ed. Fluke, Nelsonville, O., superintendent; Wm. Morgan, Murray City, O., mine boss. Drift, No. 6 seam, about 6 feet thick. Ventilated by fan, machine mining, and employs 6 machine men, 90 loaders and 34 day hands. This county having been detached from the Third District in the formation of a new one, I visited this mine with the new District Inspector, Mr. Ed. Kennedy, and found the mine in fair condition.

Jobs No. 1 and 2.

Located at Jobs, O., on the Brush Fork branch of the Hocking Valley R. R. Operated by the Sunday Creek Co., Columbus, O. Ed. Fluke, Nelsonville, O., superintendent; Jos. Smith, Jobs, O., mine boss. Drift openings, No. 6 seam, about 6 feet thick. Fan ventilation, machine mining, and employs 185 loaders, 14 pick miners, 18 cutters and 74 day hands. Visited this mine March 2nd, to investigate the death of Jeff Robinson, who was killed in the boiler house while assisting in raising two lengths of 4-inch pipe, 40 feet 9 inches long, for a gin

pole for the purpose of raising a boiler stack. When half-way up the rope broke, letting the pipe fall and catching Mr. Robinson against the boiler with sufficient force to cause almost instant death.

Gem.

Located in Lost Hollow on the Lost Run branch of the H. V. R. R. Operated by the Gem Coal Co., Nelsonville, O. Robert Eddie, Nelsonville, O., superintendent and mine boss. Drift, No. 6 seam, 10 feet thick. Fan ventilation, machine mining, and employs 36 loaders, 2 cutters and 11 day men. Visited this mine February 14th to investigate a complaint in regard to air, but found repairs made and mine in good condition. On that date requested that a trapper be employed for the trap door between the two main entries and escapementway repaired.

PERRY COUNTY.

Sunday Creek No. 5.

Located near New Straitsville, O., on the H. V. R. R. Operated by the Sunday Creek Co., Columbus, O. Ed. Fluke, Nelsonville, superintendent; Robert J. McGuire, New Straitsville, O., mine boss. Drift, No. 6 seam, from 4 to 6 feet thick. Ventilated by fan, machine mining and employs 38 loaders, 4 cutters and 11 day hands. Visited June 30th, and one side in fair condition; the new side, however, was found poorly ventilated on account of the territory being badly cut by old works with which it was surrounded. Efforts were being made to remedy those defects at this time. Most of the high coal is worked out and the work is very irregular.

S. C. No. 9.

Located near Carrington on the Glouster Branch of the Z. & W. R. R. Operated by the Sunday Creek Co., Columbus, O. John Wile, Carrington, O., superintendent; E. C. Roberts, Hemlock, O., mine boss. Ventilated by one steam and two electric fans. Slope, No. 6 seam. Machine mining, and employs in both openings 134 loaders, 16 cutters and 70 day hands. Visited June 22nd and found in good condition in each opening.

S. C. No. 268.

Located a half-mile north of Rendville, on the T. & O. C. R. R. Operated by the Sunday Creek Co., Columbus, O. D. H. Williams, Athens, O., superintendent; Isaac Jones, Rendville, O., mine boss. Slope, 400 feet long, No. 6 seam, about 14 feet thick. Ventilated by two fans, machine mining, and employs 254 loaders, 18 cutters and 70 day hands. Visited July 8th and found in fair condition, except on what is known as the Hill entries and first and second east north. While the volume of air was large in both instances, a dense cloud of powder smoke persistently remained in the working places, this being the last of the air. One of the fans was out of repair on this date, and perhaps conditions were worse on that account.

S. C. No. 301--Congo.

Located at Congo on the Z. & W. R. R. Operated by the Sunday Creek Co., Columbus, O. Harry Kelly, Congo, O., superintendent; Andrew Wilson, same

place, mine boss. Shaft, 28 feet deep, No. 6 seam of coal, about 14 feet in thickness. Ventilated by fan, has machine mining and employed at that time, May 23rd, 200 loaders, 20 cutters and 75 day men. Visited on the above date and found in its usual good condition.

S. C. 302—Congo.

Located near Congo on the Z. & W. R. R. Operated by the Sunday Creek Co., Columbus, O. Shaft opening, 20 feet deep, No. 6 seam, about 14 feet thick. Harry Kelly, Congo, O., superintendent; John E. Duffy, Congo, mine boss. Ventilated by fan, machine mining, and employs 220 loaders, 16 cutters and 60 day hands. Visited January 31st to investigate the death of Steve Kulish, who was killed while digging down a standing shot in a breakthrough near the face of his working place.

San Toy Nos. 1 and 2.

Located at San Toy on the San Toy division of the B. & O. R. R. Operated by the New England Coal Co., Columbus, O. C. F. Evans, Columbus, O., superintendent and receiver, and Chas. Wheeler, San Toy, O., mine boss in charge at both places. Both mines have been idle for the period covered by this report. Visited the mines May 21st, to investigate a charge that men were being sent in to mine fuel coal at each mine without having the mines examined by competent parties in relation to gas, but found that the fire boss was examining places before any others were permitted to enter the mines.

Pine Run No. 44.

Located one and one-half miles north of Sulphur Springs on the Z. & W. R. R. Operated by the Johnson Coal Mining Co., Columbus, O. W. E. Williams, Shawnee, O., superintendent; John True, same place, mine boss. Slope, No. 6 seam of coal, about $4\frac{1}{2}$ feet thick. Ventilated by fan, machine mining, and employs 134 loaders, 22 cutters and 63 day hands. Visited June 23rd and found in poor condition, having been idle some time previous and quite a number of rooms had fallen in, destroying the circulation of air through the other working places and necessitating the driving of long breakthroughs or cutoffs in several entries. This work was in progress at the time of this visit; requested an air-shaft sunk near the lead of the main west entries and one near the head of the main north, which the management agreed to do, and which, when completed, will put the mine in good condition.

Rock Run No. 3.

Located near New Straitsville, O., on Rock Run branch of the B. & O. R. R. Operated by the C. & H. C. & I. Co., Columbus, O. Fred Weymuller, New Straitsville, O., superintendent and mine boss. Drift, No. 6 seam, from 6 to 8 feet thick. Ventilated by three fans, composed entirely of pillar work, and employs 100 loaders, 2 cutters and 25 day hands. Visited June 29th and found in poor condition on account of the many openings in the pillar work and the inability to conduct the air around them. Suggested that a new opening be made on the west side at the crop line for an inlet for the electric fan on that side, and that the steam fan on the east be reversed, to prevent the forcing of hot air in at the head of the workings on the east side.

Central.

Located at New Straitsville, on the H. V. R. R. Operated by the C. & H. C. & I. Co., Columbus, O. Fred Weymuller, New Straitsville, superintendent; Sam Anchor, same place, mine boss. Drift, No. 6 seam of coal, from 6 to 8 feet thick. Ventilated by fan, machine mining, and employs 170 loaders, 20 pick miners, 16 cutters and 92 day hands. June 29th, found in poor condition on the south end; requested rooms on the east end of 25th west stopped until a check door was put up, and 3 and 4 south entries stopped until breakthrough was put through. Requested a new opening made or brick brattices put in between the inlet entries.

XX No. 1 and 1½.

Located at Shawnee, O., on the B. & O. and Z. & W. R. R. Operated by Taylor, Williams & Jenkins, Columbus, O. Drift openings, No. 6 seam of coal, from 5 to 8 feet thick. D. C. Jenkins, Shawnee, O., superintendent; W. K. Redfern, same place, mine boss. Fan ventilation, pick and machine mining, and employs 44 loaders, 6 cutters and 28 day hands. Visited January 19th, to investigate an accident which resulted in the death of T. T. Jones on the 1½ side by a fall of slate. Visited again July 6th and found that the main pillars on No. 1 side were being drawn and the mine nearing exhaustion, and under the circumstances, conditions were as good as could be expected. Found condition in 1½ poor and requested a door placed between entry leading to the Fannie Furnace mine and aircourse. The workings in this mine consist largely of stumps and pillars left from former operations and are rapidly nearing completion.

XX No. 3.

Located near No. 1 and No. 1½ and on the same railroad. Operated by Jenkins & Redfern, Shawnee, O. D. C. Jenkins, Shawnee, O., superintendent; D. W. James, same place, mine boss. Drift opening, No. 6 seam, about 8 feet thick. Ventilated by fan, pick and machine mining, and employs 12 pick miners, 28 loaders, 3 cutters and 9 day hands. Visited May 20th, to investigate the death of John K. Fox, who was killed by fall of top coal off a stump near the main entry after firing a shot in the coal for the purpose of breaking it down. On this visit main entry pillars were being drawn for final abandonment, and conditions found satisfactory.

Rock Run Clay.

Located on Rock Run and the product used at brick plant of the Iron Clay Brick Co., at that place. Drift opening, No. 5 seam of clay, which runs from 6 to 8 feet thick. Ventilated by furnace, and employs 9 miners and 7 day hands. W. J. O'Donnell, Shawnee, O., superintendent and mine boss. Visited the mine April 1st and found ventilation deficient and requested a furnace built and the return airway and main entry timbered. Visited again May 14th and suggested furnace stack be raised about twenty feet higher to secure better results. July 14th, found mine in fair condition.

Rock Run Coal.

Located on Rock Run and coal used to fuel the Iron Clay Brick Company's plant near the same place. W. J. O'Donnell, Shawnee, O., superintendent and mine boss. Drift opening, No. 6 seam, about 6 feet thick. Natural ventilation,

pick mining, and employs 9 miners and 3 day hands. Visited July 14th and found in fair condition. Tested a pair of platform scales on this date, which were found incorrect, and requested that they be repaired or replaced by a new set. By mutual agreement arrangements were made by the company and men to continue for a consideration on the old scales until request could be complied with.

Bear Run No. 1.

Located about one mile west of Lyonsdale on the C. & M. V. R. R. Operated by the W. A. Gosline & Son Coal Co., Toledo, O. E. W. Lewis, New Lexington, O, superintendent; Chas. Priest, same place, mine boss. Shaft opening, 64 feet deep, No. 6 seam, about 4 feet thick. Fan ventilation, machine mining, and employs 14 cutters, 105 loaders and 29 day hands. Visited March 13th and found that room breakthroughs were being gobbed up in several sections of the mine and insisted that this habit must be discontinued. The south entries were found in poor condition on account of the excessive amount of water on the travelingways, but this will be remedied by the installation of an electric pump now arranged for. Visited again May 26th, but found idle and in much better condition and a number of improvements under way.

Keystone No. 2.

Located at McLuney, O., on the C. & M. V. R. R. Operated by the Zanesville Coal Co., Crooksville, O. Thos. Opie, Crooksville, superintendent; Thos. Ward, McLuney, O., mine boss. Drift, No. 6 seam, about 4 feet thick. Fan ventilation, machine mining, and employs 12 cutters, 69 loaders and 20 day hands. Visited February 28th and found the mine in good condition, except on the 9 and 10 west entries where ventilation was weak. A new opening is being made on the east which will furnish an inlet at the head of the workings and put the mine in first-class condition. Again visited May 12th and tested two pairs of scales, and found the mine in good condition.

Keystone No. 3.

Located a half-mile east of Crooksville on the C. & M. V. R. R. Operated by the Zanesville Coal Co., Crooksville, O. Thos. Opie, Crooksville, O., superintendent, and C. A. Mullen, same place, mine boss. Drift, No. 6 seam, which runs about 4 feet in thickness. Ventilated by fan, pick mining, and employs 20 miners and 3 day hands. Visited May 7th and July 24th, and on both occasions found in good condition.

New Crescent.

Located near Roseville on the C. & M. V. R. R. Operated by the Kennon Coal & Mining Co., Cleveland, O. R. T. Price, Cleveland, O., superintendent; G. W. Robinson, Roseville, O., mine boss. Drift, No. 6 seam, about 4 feet thick. Ventilated by fan, machine mining, and employs 2 cutters, 14 loaders and 11 day hands. Visited March 10th and found in good condition, the main entries only being worked, which were being driven as rapidly as possible by double shift for the purpose of developing territory beyond the bad roof now encountered.

Union.

Located one mile east of Crooksville on the C. & M. V. R. R. Operated by the Union Coal Mining Co., Columbus, O. Geo. Carding, Rose Farm, O., super-

intendent; Thad H. Carter, Crooksville, O., mine boss. Drift, No. 6 seam, about 4 feet thick. Ventilated by fan, machine mining, and employs 6 cutters, 38 loaders and 13 day hands. Visited March 11th and found in fairly good condition. Requested a door placed between the 1 and 2 west on south and the new opening or travelingway cleaned out.

Rends No. 1 and 2.

Located near Crooksville on the C. & M. V. R. R. Operated by the Standard Hocking Coal Co., Chicago, Ill. N. B. Snell, Crooksville, O., superintendent; Jas. S. Murphy, same place, mine boss. Drift openings, No. 6 seam, about 4 feet thick. Ventilated by fans, machine mining, and in both openings employs 18 cutters, 86 loaders and 35 day hands. Visited March 9th and found No. 2 in poor condition and requested that fan be reversed and air pulled through the old works after passing the men instead of, as at present; passing the old works first. Requested that an airshaft be put down at the head of the south entries in No. 1 and the fan reversed when completed.

Indian Run.

Located one and a quarter miles west of Hartleyvale on a branch of the Z. & W. R. R. Operated by the Indian Run Mining Co., Wellston, O. J. H. Sellers, Wellston, O., superintendent; M. K. Patterson, Glouster, R. F. D. No. 1, mine boss. Shaft, 53 feet deep, No. 6 seam, from 3 to 6 feet thick. Ventilated by fan, machine mining. Visited July 10th and found that part of the bottom had fallen in, endangering the main shaft, and advised that it be securely timbered as soon as possible. Found many falls throughout the mine on account of mine being idle for some time previous and the timbering neglected.

Hazelton.

Located near Shawnee, O., on the B. & O. R. R. Operated by Geo. C. Gibbs, New Straitsville, O., who is superintendent and mine boss. Drift, No. 6 seam, about 8 feet thick. Ventilated by fan, machine mining, and employs 4 cutters, 38 loaders and 6 day hands. Visited July 15th, found the mine in poor condition on account of defective bratticing. Stopped 3 and 4 west entries until breakthrough was made at the face of 3rd west or last breakthrough cleaned out, and requested fan moved to the mouth of outlet entry and brattices repaired throughout the mine.

Davis Bros.

Located at Shawnee on the B. & O. and Z. & W. R. R. Operated by the Davis Bros. Coal Co., Shawnee, O. G. C. Davis, Shawnee, O., superintendent; Thos. L. Davis, same place, mine boss. Drift, No. 6 seam, about 5 feet thick. Ventilated by fan, machine mining, and employs 4 cutters, 33 loaders and 3 day hands. May 5th and 6th, mine was found in poor condition, the fan being too small to properly ventilate the territory on account of frequently breaking into old works filled with black damp, which usually filled the mine when the fan stopped at night. Advised a larger fan put in and brick brattices built be-

tween inlet and outlet entries. July 1st, found mine but little improved and again insisted that the requests previously made be carried out as soon as possible.

Simons Nos. 5 and 6.

Located about one mile southwest of Redfield on a branch of the Z. & W. R. R. Operated by A. Simons, Redfield, O., who is superintendent and mine boss. Drift openings, 5 and 6 seams of coal, about 4 feet thick. Ventilated by fan, and when completed, will be machine mining. Visited May 8th, to investigate the best location for a fan before operation commenced, the plant then being in course of installation.

Visits Were Made to the Following Mines Which Were Found Idle.

Shawnee Flash Brick. Shaft just sunk, July 9th.

Junction City Sewer Pipe Co. Clay mine just opened, May 30th and June 26th.

Wilbren mine being reopened, June 30th.



FOURTH DISTRICT

W. C. WIPER.

COMPOSED OF THE COUNTIES OF MORGAN, MUSKINGUM AND PERRY.

Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio:

Dear Sir.—In compliance with the custom of the Mining Department, I herewith submit to you my first report of the Fourth Mining District, composed of the counties of Morgan, Muskingum and Perry, which covers a period commencing from the time of my appointment, August 1, 1908, to December 31, 1908.

One hundred and twenty-one visits were made and five sets of scales tested and ten permanent improvements made. Four mines remained suspended throughout the year and one abandoned.

In discharging the duties of District Mine Inspector, I have visited the mines under my jurisdiction as often as time and the duties of the office would permit. With but few exceptions, the mines in this district are in fair condition.

The coal trade has been very dull through the district, especially in the low coal veins, mines only working one and two days a week, owing to a lack of orders and water supply.

Two fatal accidents occurred in this district during the time covered by this report. Jno. Port, miner, killed in Upson Mine No. 1 by fall of roof coal, Shawnee, Ohio, and William Hardy, who was employed as motorman at Tropic Mine, was killed by colliding with a trip of empty cars pushed off bottom by another motor.

In conclusion, I desire to extend my thanks to you and the members of the Mining Department for the many courtesies and advice rendered me in the discharge of my duties

Respectfully submitted,

W. C. WIPER, Malta, Ohio.

December 31, 1908.

Inspector District No. 4.

MORGAN COUNTY.

Rose.

Located near Tropic Station on Z. & W. R. R. Operated by the Carding Coal Co., Columbus, Ohio. Geo. Carding, Rosefarm, O., superintendent; Geo. Lamb, Jr., same place, mine boss. Drift, No. 6 seam, about 4 feet thick. Machine mining, fan ventilation, and employs 80 loaders, 10 machine runners and 36 day hands. Visited November 9th. Found mine in fair condition, with the exception of electrical wires. Requested that they be properly protected in compliance with the law.

Tropic.

Located near Tropic Station on Z. & W. R. R. Operated by the Tropic Mining Co., Toledo, Ohio. James Fleming, Rosefarm, O., superintendent; Walter E. Edden, same place, mine boss. Slope opening, 900 feet long, No. 6 seam, about 4 feet thick. Machine mining, fan ventilation, and employs 170 loaders, 22 machine runners and 52 day hands. Visited October 7th. Found in fair condition, with the exception of haulage roads, which were very dry and dusty. Requested the same removed and sprinkled, and machine wire put in better condition. Visited December 3rd, to investigate death of William Hardy, who was killed on motor by running into a trip of empty cars pushed off bottom by another motor.

MUSKINGUM COUNTY.

Blue Rock.

Located near Stone Station on O. & L. K. Division of the B. & O. R. R. Operated by the Blue Rock Coal Co., Gaysport, O. J. Souders, Gaysport, O., superintendent; Wm. Shook, Blue Rock P. O., mine boss. Drift, No. 7 seam, 4 feet thick. Ventilated by furnace, coal mined by solid shooting. Employs 12 miners and 4 day hands. Visited December 4th. Found idle. No fire in furnace; no inspection made.

Neal.

Located at Cannelville, O., on Z. & W. R. R. Operated by the Boyd Coal Co., Cannelville, O. J. A. McGarvey, Cannelville, O., superintendent and mine boss. Coal is mined by solid shooting. Furnace ventilation, employs 18 miners and 7 day hands. Visited September 1st in company with Inspector W. H. Turner, Fifth District, and found in fair condition.

Granger.

Located near Buckeye Station on O. & L. K. Division of B. & O. R. R. Operated by the Capitol Coal & Coke Co., Columbus, O. J. H. Morefield, South Zanesville, is superintendent and mine boss. Drift, No. 6 seam, about 3 feet thick. Machine mining, fan ventilation. Employs 48 loaders, 8 machine run-

ners and 13 day hands. Visited October 9th. Found in fair condition, but without a second opening according to requirements of law. Requested that new opening be made at once; to which they agreed.

Dewey.

Located near Sealover Station on O. & L. K. Division of B. & O. R. R. Operated by the Duncan Run Coal Mining Co., Detroit, Mich. Chas. McPeck, Philo, superintendent and mine boss. Pick mine, furnace ventilation. Employs 12 miners and 2 day hands. Visited October 23rd. Found ventilation on 1st and 2nd south entries impaired on account of three breakthroughs being open. Ordered men stopped until breakthroughs were bratticed up.

Cadillac.

Located near Dewey Mine and operated by the same company. Pick mining, employs 9 miners and 2 day hands. Operations are all confined to pillar work and the mine is nearly exhausted. Visited October 23rd.

Elk.

Located near Roseville on C. & M. V. R. R. Operated by the Elk Coal Co., Columbus, Ohio. S. E. Raney, Columbus, O., superintendent; G. W. Davies, Zanesville, O., mine boss. Drift, No. 6 seam, machine mining. Employs 44 loaders, 10 machine runners and 16 day hands. Visited October 5th. Found air circulation very good. Mine is ventilated by a five-foot electrical fan placed at head of south face entry, which does not give very good results on account of leakage in brattices causing the fan to churn the air. Requested stoppings repaired and made secure between intake and outtake. Ordered powder taken in when power was off line and electrical wires put in proper condition.

Fair Oaks.

Located at Romine Station on the O. R. & W. R. R. Owned by the Fair Oaks Coal Co. D. B. Wilson, Corning, O., superintendent. Drift, No. 7 seam, about 6 feet thick. Visited September 4th and found mine suspended.

Haymarket No. 7 (No 1).

Located at Cannelville on Z. & W. R. R. Operated by the Fobes-Tompkins Coal Co., Columbus, O. Forest Dunn, Cannelville, superintendent and mine boss. Drift, furnace ventilation. Coal is mined by solid shooting and employs 7 miners and 7 day hands. Visited August 31st. Mine in fair condition.

Haymarket No. 7 (No. 2).

Located near No. 1 and operated by same company. Has furnace ventilation. Coal is mined by solid shooting, and employs 20 miners and 5 day hands. Visited August 31st. Requested furnace entry cleaned out and brattices renewed and water taken out of escapementway.

No. 16.

Located at Cannelville, O., on Z. & W. R. R. Operated by the Blaney Coal Co., Cannelville, O. W. H. Blaney, Cannelville, O., superintendent and min:

boss. Drift, No. 7 seam, 4 feet thick. Coal is mined by solid shooting, furnace ventilation. Employs 20 miners and 8 day hands. Visited September 2nd and tested a set of Champion Hopper scales and found them weighing correctly.

Peacock No. 38.

Located at Cannelville on Z. & W. R. R. Operated by Maynard Coal Co., Columbus, O. Elmer Bratten, Cannelville, O., superintendent; Edward Hysel, same place, mine boss. Drift, No. 6 seam, 3 feet 8 inches thick, furnace ventilation. Coal mined by solid shooting, and employs 80 miners and 22 day hands. Shot firers are employed at this mine. Visited September 3rd, in company with Inspector W. H. Turner, for purpose of inspection, but found idle. Visited again in company with Inspectors W. H. Turner and J. L. McDonald and Mining Commission. Visited November 19th, found in fair condition. Requested breakthroughs kept clean. Tested a pair of Fairbanks hopper scales and found weighing correctly.

Ables.

Located one mile south of Buckeye on a branch of the Cannelville division of the Z. & W. R. R. Operated by the Muskingum Coal and Railway Co., Zanesville, O. L. D. Able, Zanesville, O., superintendent; Enos Miller, South Zanesville, mine boss. Drift, No. 6 seam, 3 feet 6 inches thick. Machine mining, fan ventilation. Employs 37 loaders, 10 machine runners and 21 day hands. Visited November 2nd, found mine in fair condition with the exception of room No. 17 on 6 west entry and No. 19 and No. 20 on 4 west, where breakthrough law was not complied with. Requested that breakthroughs be made at regular distance and trolley wire and machine wire be put in proper condition.

Pan-American.

Located at Cannelville, O., on the Z. & W. R. R. Operated by the Pan-American Coal Co., Newark, O. Chas. Anderson, Cannelville, Ohio, superintendent and mine boss. Drift, No. 6 seam, about 3 feet 10 inches thick. Coal is mined by solid shooting. Fan ventilation, and employs 40 miners and 12 day hands. Visited August 17th in company with Inspector W. H. Turner, to investigate an order given by former-inspector Mr. Pritchard in regard to shot firers being placed at mines when 20 miners or more are employed, whose duty it is to enter the mine after all the miners and mine laborers have come out of the mine and fire the shots and allow sufficient time to elapse between shots to dilute the smoke and render it harmless. After a careful examination we could not see where it would be practical to do away with shot firers, as we considered it the safest method, especially in mines where coal is mined by solid shooting. A new 10-foot Cole fan had just been installed. Mine found in fair condition, with exception of 3 and 4 west and 5 and 6 north entries, where air was deficient. Requested ventilation improved on these entries and dust sprinkled and removed. A new opening is being made near the coal field and rope haulage installed, which will be a great improvement.

Walnut Hill No. 2.

Located at Cannelville, O., on the Z. & W. R. R. Operated by the Walnut Hill Coal Co., Detroit, Mich. W. H. Blaney, Cannelville, O., superintendent; J. F. Hodgson, same place, mine boss. Drift, No. 6 seam, 3 feet 8 inches thick. Machine and pick mining; fan ventilation; employs 13 miners, 20 loaders, 5

machine runners and 11 day hands. Visited September 2nd in company with Inspector W. H. Turner. Found mine in poor condition. Requested ladder placed in air shaft and machine wire placed on suitable insulators and trap doors used instead of curtains. Ordered black oil barrels placed in some place off of entry. Tested a pair of hopper scales and found incorrect.

Werner, or Moorehead.

Located three-fourths of a mile east of Zanesville on Marietta wagon road. Operated by W. A. Werner, Zanesville, O. Chas. Huey, Zanesville, O., superintendent; Jno. Huey, same place, mine boss. Drift, No. 6 seam, 3 feet thick. Pick mining, furnace ventilation, and employs 26 miners and 3 day hands. Visited November 16th, found in fair condition. Air was very weak on 1st and 2nd east entries. Door was being placed on cut-off, which would improve condition.

Werner No. 2, or Gypsy Grove.

Located on Saltgum Hollow on South River road. Operated by the same company. Drift, No. 6 seam, 2 feet 6 inches thick. Pick mining, has furnace ventilation, employs 8 miners and 1 day hand. Visited December 22nd, found air conditions very poor. Requested curtain placed over room necks in order to conduct air to face of entry. These mines have wagon transportation.

SMALL MINES EMPLOYING LESS THAN TEN MEN—(Muskingum County).

Lehew.

Located on Millrun wagon road, two miles northeast of Zanesville. Operated by Geo. M. Lehew, Zanesville, O. Drift opening. Visited November 12th. Five miners employed, wagon transportation, dog haulage.

Harper Bros.

Located on Millrun wagon road, two miles northeast of Zanesville. Operated by Chas. Harper, Zanesville, O. Drift opening. Visited November 11th. Employs 6 miners and 1 day hand. Wagon transportation, dog haulage.

T. W. Harper.

Located one-fourth mile northeast of Wortley Station. Operated by T. W. Harper, Wortley Station, O. Drift opening. Visited November 12th. Employs 4 miners and 1 day hand. Wagon transportation, dog haulage.

Harry Fisher.

Located two miles east of Zanesville on Millrun wagon road. Operated by Harry Fisher, Zanesville, O. Drift opening. Employs 3 miners. Visited November 11th. Wagon transportation, dog haulage.

Weller.

Located one-half mile south of South Zanesville. Operated by William Weller, South Zanesville. William Wagner, same place, superintendent and

mine boss. Drift opening. No. 6 seam, 3 feet 6 inches thick. Furnace ventilation; employs 10 miners and 1 day hand. Pick mining, dog haulage and wagon transportation. Visited November 13th.

Lutz Bros.

Located on Millrun wagon road, two miles east of Zanesville. Operated by Lutz Bros., Zanesville, O. Jno. Lutz, Zanesville, O., superintendent and mine boss. Drift, No. 5 seam, 4 feet 6 inches thick. Pick mining, natural ventilation, mule haulage and employs 3 miners and 1 day hand. Visited November 11th. Conditions approved.

Greiner.

Located one-fourth mile northeast of Wortley Station. Operated by H. L. Greiner, Zanesville, O. J. R. Greiner, Wortley Station, superintendent and mine boss. Drift, No. 5 seam, 5 feet thick. Pick mining, fan ventilation, mule haulage, and employs 8 miners and 3 day hands. Visited November 12th, conditions approved. Wagon transportation.

Fishers No. 1.

Located three miles south of Zanesville on South River road. Operated by F. H. Fisher, Zanesville, O. William Layman, Zanesville, O., superintendent and mine boss. Drift opening, pick mining, dog haulage, wagon transportation, and employs 9 miners and 1 day hand. Visited November 20th.

Fishers No. 2.

Located near No. 1 and operated by the same company. Drift opening, No. 6 seam, 3 feet thick. Pick mining, employs 6 miners and 1 day hand. Visited November 20th.

Porter.

Located one mile southwest of Mount Sterling on National Pike. Operated by Porter Bros., Zanesville, O. Drift, No. 5 seam, 5 feet thick. Coal is mined by solid shooting, natural ventilation, mule haulage, wagon transportation, and employs 7 miners and 2 day hands. Visited November 18th. Air conditions not the best. Requested brattices kept up and ladder placed in air shaft.

Dicks.

Located near Porter Bros. mine and operated by W. E. Dick, Zanesville, O. Drift, No. 5 seam, 5 feet thick. Coal is mined by solid shooting, natural ventilation, mule haulage, wagon transportation, and employs 5 miners and 1 day hand. Visited November 18th. Conditions approved.

Buchanan.

Located near Frazesburg, O., and operated by Buchanan Bros., Frazesburg. Drift opening, employs 3 miners. Natural ventilation, dog haulage. Visited December 17th.

Tarman.

Located near Frazeyzburg and operated by Chas. Tarman, Frazeyzburg, O. Drift opening, employs 2 miners, natural ventilation, dog haulage. Visited December 17th.

Nethers.

Located near Frazeyzburg and operated by Nathan Nethers, Frazeyzburg, O. Drift opening, employs 2 miners, natural ventilation. Visited December 17th.

Paynter.

Located near Frazeyzburg and operated by C. A. Paynter, Frazeyzburg, O. Drift opening, employs 4 miners and 1 day hand. Natural ventilation. Visited December 17th.

Frazer.

Located near Frazeyzburg and operated by Jas. Knight, Frazeyzburg, O. Zeb Lindell, mine boss, same place. Drift opening, employs 5 miners and 1 day hand, natural ventilation, man haulage. Visited December 17th. Requested shaft put down for escapementway.

Shrake.

Located near Frazeyzburg and operated by Jacob Lindell, Frazeyzburg, O. Drift opening, natural ventilation, dog haulage. Employs 3 miners and 1 day hand. Visited December 17th.

McCann.

Located near Frazeyzburg and operated by J. F. Hood, Frazeyzburg, O. Drift, natural ventilation, employs 3 miners. Visited December 17th. Condition fair.

Pryor.

Located near Frazeyzburg and operated by Chas. Deal, Frazeyzburg, O. Drift opening, natural ventilation, employs 2 miners. Visited December 17th; condition fair.

Combs.

Located on Saltgum Hollow and operated by W. H. Combs, Zanesville, O. Drift opening, furnace ventilation, dog haulage. Employs 2 miners. Visited December 22nd; condition fair.

Fisher.

Located on Saltgum Hollow and operated by M. L. Fisher, Zanesville, O. William Ray, Zanesville, superintendent and mine boss. Drift opening, furnace ventilation, dog haulage and employs 7 miners and 1 day hand. Visited December 22nd; requested new opening made for escapementway.

German.

Located on South River road south of Zanesville and operated by Jno. Besser, Zanesville, O. Drift opening, natural ventilation, dog haulage, employs 2 miners. Visited December 22nd; condition fair.

Shipps.

Located four miles south of Zanesville on South River road and operated by Seward Shipps, Zanesville, O., R. No. 6. W. K. Knapp, Zanesville, O., lt. No. 6, mine boss. Drift, natural ventilation, dog haulage. Visited December 21st; condition approved.

Paul 1st.

Located three and one-half miles south of Zanesville on South River road and operated by Frank Paul, Zanesville, O. Drift, natural ventilation, man haulage, and employs 5 miners and 1 day hand. Visited December 21st.

Paul 2nd.

Located four miles south of Zanesville on South River road and operated by Peter N. Paul, Zanesville, O. Drift opening, natural ventilation, mule haulage, employs 4 miners and 1 day hand. Visited December 21st.

CLAY MINES—(Muskingum County).**Lehigh.**

Located near Roseville on C. & M. V. R. R., and operated by the Hydraulic Press Brick Co., Ironspot, O. T. W. Clark, Roseville, superintendent; R. F. Wallace, same place, mine boss. Drift opening, No. 5 and No. 6 seams of clay, 8 feet thick. Natural ventilation, employs 6 miners and 1 day hand. Visited December 18th. This is a new mine and in first-class condition.

Cookson Clay.

Located near Roseville on C. & M. V. R. R. Operated by Cookson Bros., Roseville, O. Irwin Cookson, Roseville, O., superintendent. Natural ventilation, drift No. 5 seam of clay, 5 feet thick. Employs 2 miners and 1 day hand. Visited December 16th; conditions fair.

PERRY COUNTY.**Central No. 3—Hocking Valley.**

Located at New Straitsville, Ohio, on the Hocking Valley R. R., and operated by the C. & H. C. & I. Co., Columbus, O. Fred Wymiller, New Straitsville, superintendent, and Jno. Achaner, same place, mine boss. Drift, No. 6 seam, 6 and 8 feet thick. Fan ventilation, machine and pick mining; 34 miners, 212 loaders, 16 machine runners and 63 day hands. Visited August 5th in company with Inspector J. L. McDonald, to approve some system of wiring and investigate orders given by former-Inspector Mr. Pritchard, in regard to erecting brick stoppings. We were informed of a new plan, which when finished, will bring the fresh air through a new opening which will be provided in the near future close to the working places and then followed up with brick stoppings.

They agreed to change the system of wiring by placing the wires next the roof, which is of sufficient height. Visited again November 25th; found in fair condition.

Central No. 3—Rock Run.

Located on Rock Run branch of B. & O. R. R., and operated by C. & H. C. & I. Co., Columbus, O. Fred Wymiller, New Straitsville, O., superintendent, and Robert Nealson, same place, mine boss. Drift, No. 6 seam, about 7 feet thick. Has machine and pick mining, ventilated by three fans and consists mostly of pillar work; employs 39 miners, 69 loaders, 8 machine runners and 37 day hands. Visited August 19th and found mine in as good condition as could be expected, as ventilation is very difficult in the old workings.

Northwest No. 26.

Located south of Corning on the T. & O. C. R. R. Operated by the Chicago and Hocking Coal Co., Toledo, O. Slope, 300 feet long to the No. 6 seam of coal. Jno. A. Wright, Corning, O., superintendent; Wm. Bennett, same place, mine boss. Fan ventilation and machine mining. Visited December 14th; had been idle for some time, and they were cleaning up and retimbering the slope and expected to have the mine in operation by spring.

Chapman No. 1 and No. 2 (No. 1 Op.).

Located one mile west of Moxahala on a branch of the T. & O. C. R. R., and operated by the Chapman Mining Co., Moxahala, Ohio. Ben Chapman, Moxahala, O., superintendent, and Geo. W. Brown, same place, mine boss. No. 1 is a slope opening, 160 feet long, No. 6 seam of coal. No. 2 is a drift to the same seam of coal. Both openings have fan ventilation, machine mining, and employ 127 loaders, 16 machine runners and 39 day hands. Visited October 29th; found in fairly good condition. Requested that wires be placed in compliance with law and breakthroughs made full size between entries, so that the air could travel to other parts of the mine without being checked at first pair of entries. Gathering motors are used in these mines.

Chapman No. 3 and No. 4 (No. 2 Op.).

Located one mile west of No. 1 on the same railroad, and is operated by the same company. Ben Chapman, Moxahala, O., superintendent; Chas. W. Holman, New Lexington, mine boss. Slope, 160 feet long, No. 6 seam, 3½ feet thick. Both openings have fan ventilation and machine mining. Employs 34 loaders, 6 machine runners and 14 day hands. Visited October 30th. Found both openings in fair condition. Work is mostly all entry, and preparation is being made to install gathering motors in these openings in the near future.

Davis Bros.

Located at Shawnee, Ohio, on the Z. & W. R. R., and is operated by the Davis Bros., Shawnee, O. Thos. Davis, Shawnee, O., superintendent and mine boss. Drift, No. 6 seam, 5 feet thick. Fan ventilation, machine mining, and employs 32 loaders, 6 machine runners and 7 day hands. Visited August 6th in company with Inspector J. L. McDonald, on complaint of the miners in regard to air condition; found 3rd and 4th east entries deficient; ordered me taken out until new fan could be installed on top of new air shaft and the op

tinuance of brick stoppings between intake and outtake. Visited again August 21st. New fan had been installed, but conditions were not very much improved on account of trap doors and brattices being bad; ordered doors repaired and more brick stoppings erected. Visited October 13th and December 8th; found conditions somewhat improved. Mine in fairly good condition.

O. M. & M. C. Clay.

Located at Shawnee, O., on the Z. & W. and B. & O. R. R., and is owned by the Ohio Mining & Mfg. Co., Shawnee, O., and leased by Davis Bros., Shawnee, O. Stephen Gould, Shawnee, O., superintendent; Edward Davis, same place, mine boss. Shaft, 65 feet deep, No. 4 seam of clay, about 7 feet thick, and employs 18 miners and 3 day hands. Visited August 18th; found air conditions very poor. Mine ventilated by a small fan placed in the mine, which was not giving good results on account of churning the air. Requested larger fan placed outside at top of air shaft, brattices repaired and manway cleaned up and made safe for men to travel.

No. 37.

Located at New Straitsville, O., on the Hocking Valley R. R., and is operated by the Essex Coal Co., New Straitsville, O. H. H. Essex, New Straitsville, O., superintendent; Eugene Essex, same place, mine boss. Drift, No. 6 seam, 7 feet thick. Fan ventilation and machine mining. Employs 43 loaders, 4 machine runners and 14 day hands. Visited August 20th and November 24th. Found in fairly good condition with the exception of brattices being down. Work consists mostly of pillar and stump and is near the crop line.

Hazelton.

Located near Shawnee on the Z. & W. and B. & O. R. R., and is operated by G. C. Gibbs, New Straitsville, O. G. C. Gibbs, New Straitsville, O., superintendent and mine boss. Drift, No. 6 seam, which is 6 and 7 feet thick. Fan ventilation and machine mining. Employs 22 loaders, 4 machine runners and 5 day hands. Visited December 1st; found in fairly good condition. Roof is very dangerous throughout the mine. Requested that machine wire be placed in better condition and blanket and stretcher provided.

Bear Run No. 1.

Located near New Lexington, O., on the C. & M. V. R. R. Operated by W. A. Gosline & Co., Toledo, O. E. W. Lewis, New Lexington, superintendent; Chas. Preist, same place, mine boss. Shaft, 64 feet deep, No. 6 seam, about 3 feet 6 inches thick. Fan ventilation, machine mining, and employs 100 loaders, 14 machine runners and 34 day hands. Visited September 22nd. Mine had been idle for some time and just resumed work in one part of the mine. Main south entries idle on account of fall. Visited December 29th. Found mine in full operation and in much better condition.

Peerless.

Located at Saltillo on the Z. & W. R. R., and is operated by the Hamilton Wallace Coal Co., Saltillo, O. William Wallace, Saltillo, O., superintendent; Edward Moore, same place, mine boss. Drift, No. 6 seam, about 3 feet 6 inches

thick. Fan ventilation, machine mining. Employs 32 loaders, 6 machine runners and 12 day hands. Visited September 8th. Mine had been idle for 30 days and had just resumed operation. Found some very bad slate on roadway; ordered same removed and trap doors used instead of curtains, and powder taken in when power was off the line.

Iron Clay Brick Co. (Clay.)

Located on Rock Run branch of the B. & O. R. R. Operated by the Iron Clay Brick Co., Columbus, O. W. J. O'Donnell, Shawnee, Ohio, superintendent; James L. McClean, same place, mine boss. Drift, No. 6 seam of clay, furnace ventilation, and employs 7 miners and 4 day hands. Visited October 21st; found in fair condition.

Iron Clay Brick Co. (Coal).

Located on Rock Run branch of the B. & O. R. R. Operated by the same company. W. J. O'Donnell, Shawnee, O., superintendent; W. Davett, same place, mine boss. Drift, No. 6 seam, about 6 feet thick. Natural ventilation, pick mining, and employs 9 miners and 3 day hands. Visited October 21st; found air conditions very poor. Requested furnace or fan installed in air shaft. Mr. O'Donnell promised to have this done at once. Product is used for fueling brick plant.

Pine Run No. 44.

Located on a branch of the Z. & W. R. R. Operated by the Johnson Coal Mining Co., Columbus, O. W. E. Williams, Shawnee, O., superintendent; John True, same place, mine boss. Slope, 165 feet deep, No. 6 seam, about 4 feet thick. Fan ventilation, machine mining, and employs 90 loaders, 12 machine runners and 51 day hands. Visited October 15th; found air conditions very good except on 3rd west entry off 4th north entry, where air was deficient at face of deep rooms. Requested that the deep rooms be stopped until the shallow rooms could be worked up for breakthroughs. Visited December 9th and found conditions not very much improved. John Paskell has succeeded W. E. Williams as superintendent. Ordered trap door placed on main west entry outside of 1st north entry.

No. 9.

Located near New Straitsville, O., on the Hocking Valley R. R. Operated by Richard Johnson & Son, New Straitsville, O. Drift, No. 6 seam, 7 feet thick. Natural ventilation. Consisting mostly of pillar work, and employs 3 miners and 1 day hand. Visited November 30th; condition satisfactory.

Jones No. 15.

Located near New Straitsville, O., on the Hocking Valley R. R., and operated by Jones Coal Co., New Straitsville, O. Evan Jones, New Straitsville, O., superintendent and mine boss. Drift, No. 6 seam, 6 and 7 feet thick. Natural ventilation, machine mining, and employs 35 loaders, 4 machine runners and 10 day hands. Work is mostly pillar work and near to crop line. Visited August 25th and December 11th; found mine in fairly good condition on both visits.

XX No. 3.

Located at Shawnee on Z. & W. and B. & O. R. R. Operated by Jenkins & Redfern, Shawnee, O. D. C. Jenkins, Shawnee, O., superintendent; D. W.

James, same place, mine boss. Drift, No. 6 seam, 6 and 8 feet thick. Fan ventilation, machine mining, and employs 34 loaders, 2 machine runners and 8 day hands. Visited October 19th. Mine in fair condition. Work is confined to main entry pillars and is nearly exhausted.

XX No. 1 and No. 2.

Located at Shawnee, O., on the Z. & W. and B. & O. R. R. Operated by Shawnee Coal Mining Co., Columbus, O. D. C. Jenkins, Shawnee, O, superintendent; W. K. Redfern, same place, mine boss. Drift, No. 6 seam, 6 and 8 feet thick. Fan ventilation, pick and machine mining, and employs 16 miners, 44 loaders, 6 machine runners and 29 day hands. Visited October 20th. Work consists of pillar and stump, and ventilation is very difficult.

New Crescent.

Located on a branch of the C. & M. V. R. R., near Roseville, Ohio, and operated by the Kennon Coal and Mining Co., Cleveland, O. Thos. Evans, Roseville, Ohio, superintendent and mine boss. Drift, No. 6 seam, about 4 feet thick. Fan ventilation, machine mining, and employs 15 loaders, 4 machine runners, and 12 day hands. Visited September 30th. Work was mostly driving entry. Found mine in fair condition. Requested that wires be protected at switches. New air shaft has been made for inlet of air.

San Toy No. 1.

Located at San Toy on San Toy division of B. & O. R. R. Operated by New England Coal Co., Columbus, O. Chas. Wheeler, San Toy, Ohio, superintendent and mine boss. Shaft, 184 feet deep, No. 6 seam, 4 feet thick. Fan ventilation, machine mining, and employs 38 loaders, 6 machine runners and 14 day hands. Mine has been idle all summer, and had just resumed work in November for purpose of fuel for winter. Visited November 17th; found mine in fair condition, considering the time of operation. Requested breakthroughs kept clean and all old workings fenced off and marked "Danger," as required by law, and all switch stands placed on opposite side to trolley wire, and machine wires protected.

Greeley Nos. 1, 2, 3 and 4.

Located one mile east of McCuneville on Shawnee division of B. & O. R. R., and is operated by Peabody Coal Co., Chicago, Ill. B. J. Davis, Shawnee, O., superintendent; Lon Tague, New Lexington, mine boss at No. 1 and 2 openings; E. L. Morooney, same place, mine boss at No. 3 and 4 openings. They are drift openings, No. 6 seam of coal, 4 feet thick. Each opening has fan ventilation. Fans and pumps are run by electricity with independent wires from power plant. Machine mining, motor haulage, and employs 104 loaders, 16 machine runners and 59 day hands. Visited August 26th; found mines in fair condition. Visited No. 1 and No. 2 openings December 2nd and found in good condition.

Perry.

Located at Redfield, O., on a branch of Z. & W. R. R., and is operated by Perry Coal Co., Somerset, O. F. S. Miller, Somerset, O., superintendent; J. C. Williams, same place, mine boss. Drift, No. 5 seam, about 3 feet 6 inches

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Located on a branch of the Z. & W. R. R. Operated by A. C. Simons & Oscar Hammond, Redfield, O., superintendent; Oscar Hammond, Redfield, O., mine boss. Shaft opening, No. 5 seam, about 3 feet 6 inches thick. Fan ventilation, machine mining, and employs 18 loaders, 4 machine runners and 9 day hands. Visited September 15th; found in fair condition. Requested ladder placed in old air shaft and stack placed on boiler in order that this shaft could be used as an escapementway until new second opening could be made. Visited December 7th, to investigate the accident of William Horn, who was injured by fall of slate.

Impervious Clay.

Located at New Straitsville on the Hocking Valley R. R. Operated by Straitsville Impervious Brick Co., New Straitsville, O. J. D. Martin, New Straitsville, O., superintendent; Frank Francis, same place, mine boss. Shaft, 65 feet deep, No. 5 seam of clay, 6 and 7 feet thick. Fan ventilation and electric drilling. Employs 5 miners and 3 day hands. Visited August 24th and November 23rd. Found in fair condition on each visit. Requested miners to use wooden tampers, as dynamite is used for blasting purposes.

Sines No. 2.

Located at New Straitsville, O., on the Hocking Valley R. R. Operated by Sines Bros. & Co., New Straitsville, O. Robert Sines, New Straitsville, superintendent and mine boss. Drift, No. 6 seam, about 7 feet thick. Natural ventilation, and employs 6 miners and 2 day hands. Work consists mostly of stump and pillar and is near the crop line. Visited August 25th and November 30th, and conditions were satisfactory.

Rends No. 1 and No. 2.

Located near Crooksville, O., on C. & M. V. R. R. Operated by the Standard Hocking Coal Co., Chicago, Ill. N. B. Snell, Crooksville, O., superintendent; Joseph Murphy, same place, mine boss. Drift, No. 6 seam, 3 feet 6 inches thick. Fan ventilation, machine mining, and employs 53 loaders, 10 machine runners and 19 day hands. Visited September 29th. Mine had just resumed operation, having been idle all summer. Conditions were not very satisfactory; requested a new opening made close to working places and used as an inlet for air and escapement way. Visited December 30th, and condition not very much improved. New air shaft had been started and was nearly completed. Stopped No. 3 room on 4th east entry until breakthroughs were made at regular distance.

Shawnee Flash Clay.

Located at Shawnee, O., on Z. & W. R. R. Operated by Shawnee Flash Brick Co., Columbus, O. E. M. Starnes, Shawnee, O., superintendent, and D. T.

Harris, same place, mine boss. Shaft, 90 feet deep, No. 4 seam of clay, about 7 feet thick. Fan ventilation and electric hoist. Employs 4 miners and 1 day hand. Visited October 12th and found in fair condition.

No. 9 East and West.

Located at Carrington on Z. & W. R. R. Operated by Sunday Creek Co., Columbus, O. Jno. Wiles, mine superintendent, Carrington, Ohio; Edward Roberts, Hemlock, O., mine boss. Slope, No. 6 seam, about 7 feet thick. Fan ventilation, machine and pick mining, and employs 8 miners, 131 loaders, 16 machine runners and 62 day hands. Visited August 7th in company with J. L. McDonald, Inspector 3rd District. Found mine in fairly good condition, except 6th east cut-off; requested check placed between No. 1 and No. 2 rooms, in order to conduct air to face of rooms. Visited December 10th; found in fair condition.

NOTE.—D. H. Williams, Athens, Ohio, is district superintendent for all mines belonging to the Sunday Creek Co., in this district.

No. 268.

Located one-half mile north of Rendville on the T. & O. C. R. R. Operated by the Sunday Creek Coal Co., Columbus, O. Isaac Jones, Glouster, O., mine superintendent, and David Mason, mine boss, Corning, O. Slope, 400 feet long, No. 6 seam about 8 feet thick. Fan ventilation, machine mining, and employs 210 loaders, 18 machine runners and 71 day hands. Visited October 28th; found in fairly good condition.

No. 301.

Located at Congo, O., on the Z. & W. R. R. Operated by Sunday Creek Co., Columbus, O. Harry Kelly, Congo, O., mine superintendent; Andrew Wilson, same place, mine boss. Shaft, 27 feet deep, No. 6 seam, 12 feet thick. Fan ventilation, machine and pick mining, and employs 71 miners, 230 loaders, 20 machine runners and 80 day hands. Visited October 22nd; found in fair condition; requested that miners stay in their working places and not loaf on motor switches or about trap doors when mine is working.

No. 302.

Located at Congo on the Z. & W. R. R. Operated by the Sunday Creek Co., Columbus, O. Harry Kelly, mine superintendent; Jno. Duffy, Congo, O., mine boss. Shaft, 20 feet deep, No. 6 seam, about 12 feet thick. Fan ventilation, has machine and pick mining, and employs 45 miners, 269 loaders, 16 machine runners and 69 day hands. Visited October 26th and 27th; found in fair condition.

No. 321 (Pedlow).

Located at Misco, O., on the Z. & W. R. R. Operated by the Sunday Creek Co., Columbus, O. Herman Theison, Misco, O., superintendent and mine boss. Shaft, 32 feet deep, No. 6 seam, about 3 feet 6 inches thick. Fan ventilation,

machine mining and employs 102 loaders, 16 machine runners and 54 day hands. Visited October 6th; found in fair condition; requested breakthroughs be kept clean.

Twentieth Century No. 2 and No. 3.

Located at Saltillo, O., on a branch of Z. & W. R. R. Operated by W. J. Hamilton Coal Co., Columbus, O. J. C. Davies, Zanesville, O., superintendent and mine boss. Drift, No. 5 seam, about 4 feet thick. Furnace ventilation, pick mining, single entry system, and employs 20 miners and 10 day hands. Visited September 16th; found in poor condition; requested that more air be furnished to face of working places.

Union No. 3.

Located near Crooksville, O., on a branch of C. & M. V. R. R. Operated by Union Coal Mining Co., Columbus, O. Geo. Carding, Rosefarm, superintendent; Walter McKay, Crooksville, mine boss. Drift, No. 6 seam, about 3 feet 6 inches thick. Fan ventilation, machine mining, and employs 36 loaders, 6 machine runners and 14 day hands. Visited October 8th and found in fairly good condition; requested that trap doors be used instead of curtains, and as escapementway was unavailable on account of water, ordered ladder placed in new air shaft and machine wire protected. Visited December 28th; former requests were being complied with. Air conditions not so good on account of squeeze on air course, but a new air course was being driven from new air shaft.

Dixie.

Located at Dixie on Shawnee division of B. & O. R. R. Operated by Upson Coal & Mining Co., Newark, O. W. F. Upson, Newark, O., superintendent; Jno. M. Bell, Dixie, O., mine boss. Drift, No. 6 seam, about 3 feet 6 inches thick. Fan ventilation, machine mining and electric haulage on 3rd rail system. Employs 80 loaders, 10 machine runners and 20 day hands. Visited October 14th and found in fair condition. Requested that 3rd rail trolley be covered with boards.

Wilbren.

Located two miles east of New Lexington on C. & M. V. R. R. Operated by the Wilbren Coal Co., New Lexington. W. K. Redfern, Shawnee, O., superintendent; Frank Clark, Shawnee, mine boss. Drift, No. 6 seam, 4 feet thick. Fan ventilation, machine mining, and employs 35 loaders, 8 machine runners and 17 day hands. Visited September 28th; found in fairly good condition with the exception of breakthroughs in rooms which were made at regular distance, but were allowed to be gobbed up. Requested that they be kept clean.

Keystone No. 1.

Located one-half mile west of Crooksville, O., on C. & M. V. R. R. Operated by Zanesville Coal Co., Crooksville, O. Thos. Ople, Crooksville, O., superintendent; Geo. McClellan, Crooksville, O., mine boss. Drift, No. 6 seam, about 3 feet 6 inches thick. Fan ventilation, machine mining, and employs 99 loaders, 16 machine runners and 42 day hands. Visited September 17th and

18th. Found in fair condition with exception of motor roads, which were very dry and dusty; requested that dust be sprinkled and hauled out, and trolley and machine wires protected.

Keystone No. 2.

Located at McLuney on C. & M. V. R. R. Operated by Zanesville Coal Co., Crooksville, O. Thos. Ople, Crooksville, superintendent; Thos. Ward, McLuney, mine boss. Drift, No. 6 seam, about 3 feet 6 inches thick. Fan ventilation, machine mining, and employs 72 loaders, 12 machine runners and 24 day hands. Visited September 23rd and December 23rd. Found in fair condition on both visits, with exception of 7 and 8 west entries. Requested more air for those entries and breakthroughs between rooms kept clean. New second opening has been made by driving 8th west entry out.

Keystone No. 3.

Located one-half mile east of Crooksville on C. & M. V. R. R. Operated by the Zanesville Coal Co., Crooksville, O. Thos. Ople, superintendent; C. A. Mullen, mine boss, both of Crooksville, O. Drift, No. 6 seam, 3 feet 6 inches thick. Fan ventilation, pick mining, and employs 21 miners and 4 day hands. Visited September 21st and December 24th. Found mine in fair condition with exception of manway, which was flooded with water; on second visit manway was drained. Requested breakthroughs kept clean.

Upton No. 1.

Located near Shawnee, O., on Z. & W. R. R. Operated by R. E. Williams, Shawnee, O. R. E. Williams, Shawnee, O, superintendent. Drift, No. 6 seam, about 6 and 7 feet thick. Natural ventilation, pick mining, and employs 6 miners and 2 day hands. Visited September 25th in company with W. H. Turner, Inspector 5th District, to investigate the death of Jno. Port, who was injured by a fall of roof coal and slate.

CLAY MINES—PERRY COUNTY.

Brown No. 1.

Located on Burley Run wagon road, one and one-half miles west of Crooksville, O. Operated by W. H. Klinger, Crooksville, O. Drift opening, No. 5 seam of clay, furnace ventilation, and employs 3 miners. Visited December 16th; condition fair.

Brown No. 2.

Located on Burley Run wagon road. Operated by Williams & Zinn, Crooksville, O. Drift opening, No. 5 seam of clay, natural ventilation. Visited December 16th; conditions not very satisfactory.

Taylor.

Located on Burley Run wagon road. Operated by Taylor & Gulic, Crooksville, O. Drift, No. 5 seam of clay, furnace ventilation, and employs 2 miners. Visited December 16th; condition fair.

Stoneburner.

Located on Burley Run wagon road. Operated by H. E. Stoneburner, Crooksville, O. Natural ventilation, and employs 2 miners. Visited December 16th; conditions not very good.

Moore Bros.

Located on Z. & W. R. R., one and one-half miles west of Crooksville, and operated by W. J. Moore, Crooksville, O. Slope opening, 25 feet deep, No. 5 seam of clay. Natural ventilation, and employs 3 miners and 1 day hand. Visited December 16th; condition fair.

Kings.

Located on Burley Run wagon road and operated by Oliver King, Crooksville, O. Natural ventilation, drift opening, No. 5 seam of clay, and employs 3 miners. Visited December 16th; condition fair.

SMALL MINES EMPLOYING LESS THAN TEN MEN—(Perry County).**Keenan.**

Located near New Lexington, Ohio. Operated by Smith & Keenan, New Lexington, O. Natural ventilation, employs 6 miners and 1 day hand. Visited December 15th.

Butler.

Located near New Lexington, O. Operated by Willis & Woods, New Lexington, O. Employs 2 miners and 1 day hand. Visited December 15th.

Bennett.

Located near New Lexington, O. Operated by R. E. Bennett, New Lexington, O. Employs 2 miners and 1 day hand. Visited December 15th.

Underwood.

Located near New Lexington, O. Operated by Bowers & Underwood, New Lexington, O. Machine mining, employs 5 loaders and 2 day hands. Visited December 15th.

**MINES VISITED IN ATHENS COUNTY IN COMPANY WITH INSPECTORS
JNO. L. McDONALD, EDWARD KENNEDY AND THOS. WATERS AND
THE OHIO MINING COMMISSION.**

Canaanville.

Located at Canaanville on B. & O. S. W. R. R. Operated by the Canaanville Coal Co., Canaanville, O. Jno. Kyte, Athens, O., superintendent. Visited September 9th, 1908.

New Pittsburg No. 9.

Located near Beaumont, O., on H. V. R. R. Operated by the New Pittsburg Coal Co., Columbus, O. Geo. Butts, Nelsonville, O., superintendent. Visited September 10, 1908.

New Pittsburg No. 10.

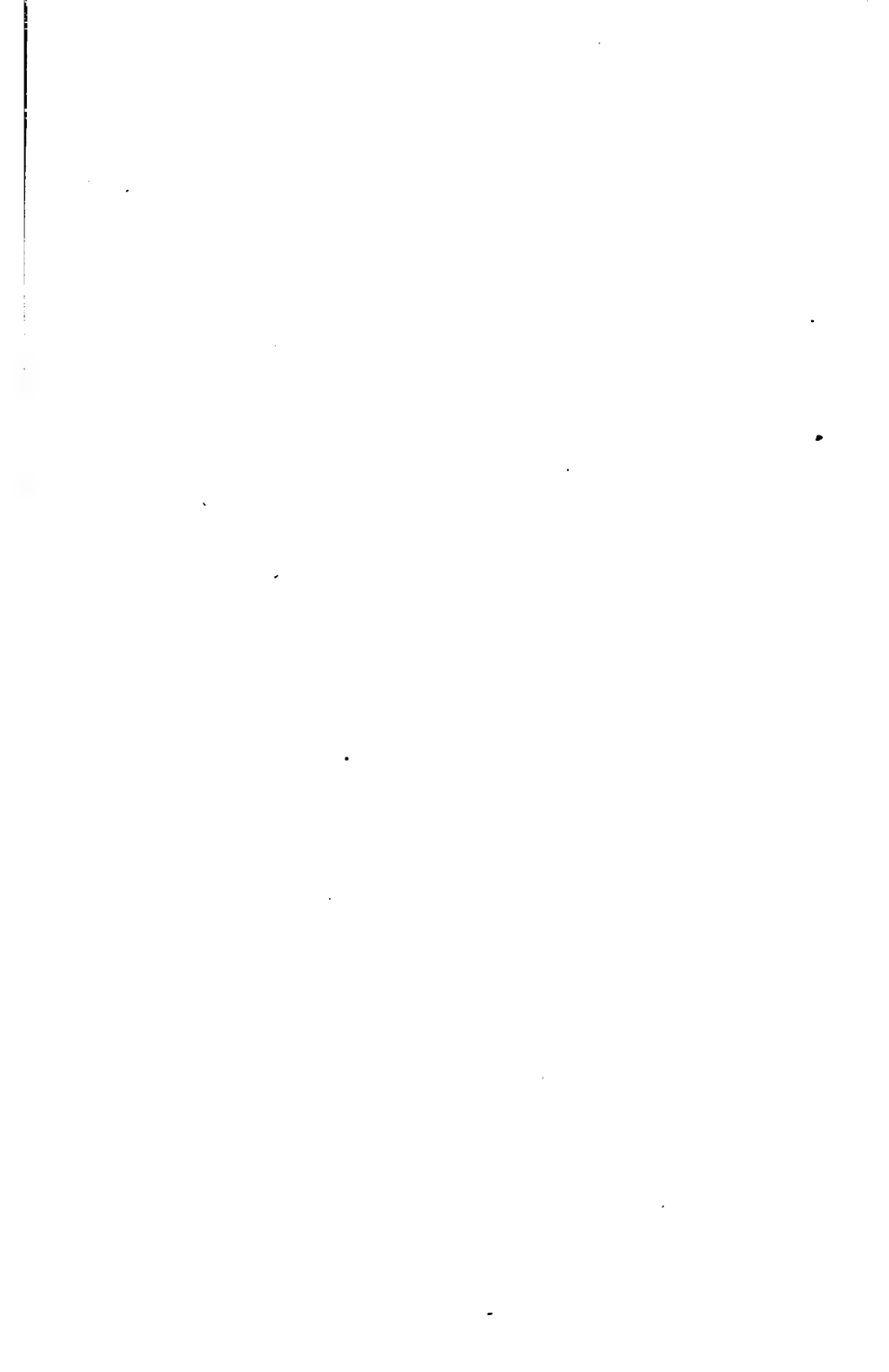
Located near Hocking, Ohio, on the H. V. R. R. Operated by the New Pittsburg Coal Co., Columbus, O. Lon Slater, Hocking, O., superintendent. Visited September 10, 1908.

Eclipse No. 3.

Located near Hocking, Ohio, on the H. V. R. R. Operated by the Johnson Coal Mining Co., Columbus, Ohio. Jno. Taylor, Hocking, O., superintendent; Jno. Brewer, Athens, R. F. D. No. 6, mine boss. Visited September 10, 1908.

Luhrig.

Located at Luhrig on B. & O. S. W. R. R. Operated by the Luhrig Coal Co., Cincinnati, O. Sherman Schull, Luhrig, O., superintendent. Visited September 11, 1908.



FIFTH DISTRICT

W. H. TURNER.

FROM JANUARY 1ST TO JUNE 1ST COMPOSED OF GUERNSEY, COSHOC-
TON AND TUSCARAWAS AND PORTIONS OF BELMONT
AND NOBLE COUNTIES.

FROM JUNE 1ST TO DECEMBER 1ST, INCLUSIVE, COMPOSED OF
GUERNSEY, NOBLE AND WASHINGTON COUNTIES
AND TWO MINES IN BELMONT.

Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio:

Dear Sir:—In accordance with the custom, I submit the annual official report of the Fifth Mining District for the year beginning January 1st and ending December 31, 1908.

The increased number of districts and inspectors occurring about June 1st relieved me of Coshocton and Tuscarawas and added Noble and Washington Counties to my district; consequently those counties will be reported for the entire year, jointly by Alex. Smith, in charge, and myself.

With few exceptions the mines of this district have worked very little since the suspension which began March 31st, and several large mines still remain idle at this writing, with no prospects of an early resumption.

I regret to note that the number of fatalities in Guernsey County increased over the preceding year, when all mines were working regularly, which is evidence that the dangers increase during slow work, and greater vigilance should be exercised in a timely detection of same.

All permanent improvements have been made when conditions demanded them. The recently enacted laws are being enforced as fast as conditions will justify. Cement stoppings are displacing lumber in a number of the mines; wires are being changed as fast as repairs are made, and new lines strung in order to comply with the requirements of the statutes.

We are advising that air shafts be sunk near the extreme interior of the old mines, as being more economical and providing double the amount of ventilation than the long lines of brick or cement stoppings placed between obstructed airways leading from present openings, besides providing a ready escape near the workings for employes in case it should be needed.

Inferior copper blasting tools have been placed on the market at unreasonable prices, which has delayed to some extent the adoption of those tools in the mines by miners who had sufficient work to enable the purchase; and miners who are getting little work truthfully maintain they are unable to purchase them without causing privation to their families. No specific orders were given along this line, but insist that the miners make every effort to get proper blasting tools at the earliest possible date, in accordance with the circular issued by the Mining Department.

Strange to say, but nevertheless true, we are meeting with the greatest opposition to the placing of shields on mining machines from those who enacted the law to protect the men employed on the machines, by claiming they detain them in their work and incur other dangers while protecting the chain. The writer agrees with them that the shield has not yet reached perfection, but it affords greater safety when it is in use, and specific orders are given for no machine to operate without them. We believe if manufacturers of machine shields would send their mechanics to the mines, witness the machines operate, a more convenient and safe shield could be devised with no additional expense.

We feel it a duty to criticise the present laws governing the precaution against dangers from abandoned oil and gas wells in unworked coal fields. We believe they will become a menace to life and property eventually, and the existing laws are inadequate in providing maps and records that would render them reasonably safe.

We feel assured that the Mining Commission will consider this matter in their deliberations, and necessary laws will be recommended to avoid future

calamities. We realize that much has been done in recent years to lessen the dangers of mining, and there is no doubt that many lives have been lengthened by this effort.

One electrocution occurred in my district during this year in the only mine where the dreaded alternating electric current is in use, and which I have protested so fervently against. I am pleased to note that this company is now making arrangements to dispense with this current and install the direct current, which is beyond question less dangerous.

Thanking you for your ever-ready assistance and advice and your many visits to the mines of my district under consultation,

Respectfully,

W. H. TURNER, Cambridge, Ohio,

Inspector Fifth District.

December 31, 1908.

BELMONT COUNTY.

(Warren Township. No. 8 Coal, 4 to 5 Feet Thick.)

Cochran.

Drift, located on the B. & O. R. R., near Baileys Mills, O. Owned and operated by the W. A. Werner Coal Co., Zanesville, O. Thos. Davey, Baileys Mills, superintendent; Elmer Booth, same address, mine foreman. Seventy-seven miners and 29 day hands employed. July 29th we learned this mine had ceased operation March 31st. Resumed June 20th and suspended July 13th, still remaining idle. The periodical suspensions were caused by having no market for the product. During the idleness a large ventilating furnace had been constructed, assuring a more adequate means of ventilation. December 22nd, Chas. Huey had been transferred to other interests of this company, and Elmer Booth had assumed the position vacated. Found the mine operating the first day's work since December 2nd. Conditions fair, considering irregular work. Furnished the managers with all the recent laws pertaining to shielding machines, copper blasting tools, boxing and storing powder, brick stoppings, and with orders for a strict enforcement of same. Electric mining, haulage and pumping. Learned of the location of a gas well on adjacent coal land, purporting to be 50 feet from a room in this mine. Requested that Mr. Booth give strict attention and see that this well is properly plugged should it be abandoned, or notify the Chief Inspector of Mines to the contrary.

Media.

Drift, situated two miles west of Barnesville on the B. & O. R. R. Owned and operated by the Colburg Coal Co., Columbus, O. Chas. Elliott, Baileys Mills, manager. Fan ventilation, electrical mining, haulage and pumping. July 29th, learned this mine suspended March 31st, when 56 persons were employed, and resumed April 20th, employing 12 miners and 7 day hands, driving four pair of entries to secure territory and drainage. December 22nd, found idle since December 1st, with no definite knowledge as to resumption. Advised concerning recently enacted laws and ordered the enforcement of same. This company controls an extensive coal field and will be one of our leading mines when trade justifies active operation.

COSHOCKTON COUNTY.**Cassingham No. 2.**

Drift, situated on the W. & L. E. R. R., west of Coshockton. Owned and operated by the Coshockton Coal Co., Coshockton, O. Chas. Cassingham, Cleveland, O., superintendent; Wm. Powers, Coshockton, O., mine foreman. Sixty-five miners and 35 day hands employed. June 19th, found ventilation satisfactory, but the wiring throughout the mine did not conform with the recent rulings of the Mining Department. Requested the wiring strung as ordered at their earliest opportunity. As Alex. Smith, the new inspector in charge,

and with whom joint inspections had been made at many of the mines in this county, was called away to a fatal accident, this inspection was made individually. Electric mining, haulage and pumping employed.

Cassingham No. 3.

Located near No. 2; owned by the same persons. The attempt to drain, as reported in the previous report, proved a failure and the mine is abandoned.

Warwick Nos. 4 and 5.

Slope openings, located four miles west of Coshocton on the Wheeling and Lake Erie R. R. Owned and operated by the Warwick Coal Co., Cleveland, O. Chas. Cassingham, Cleveland, O., superintendent; Wm. Powers, Coshocton, O., mine foreman. Employs 24 miners. These slopes are just being opened. One tipple which is under construction will handle coal from both openings. I joined Mr. Smith October 29th on this inspection. Work was progressing satisfactorily.

Morgan Run No. 3.

Drift, four miles from Coshocton. Owned and operated by the Morgan Run Coal Co., Cleveland, O. L. B. Piper, Coshocton, O., superintendent; Robert McCormick, same place, mine foreman. Employs 95 miners and 31 day hands. June 16th, Alex. Smith and myself jointly inspected mine, finding ventilation deficient on 33 and 35 parallel entries, caused by the entry caving in at the mouth of No. 6 room, obstructing the return airway. A breakthrough was being made around the fall to relieve the situation. Requested that no solid blasting be done in that section of the mine until the new airway was finished. Returned October 27th; our limited time did not afford a detailed inspection, but were assured that the general conditions were satisfactory. Electric haulage and pumping and solid blasting mining is practiced. Furnace ventilation.

Wade No. 2.

Drift, located on the W. & L. E. R. R., three miles from Coshocton. Owned and operated by the Wade Coal Co., Cleveland, O. James Perkins, Coshocton, O., manager. Employs 18 miners and 4 day hands. Furnace ventilation, pick mining and mule haulage. June 16th, jointly examined by Alex. Smith and myself, finding conditions satisfactory. Mr. Perkins attributed his ability to get the deficient coal worked to the fact that employment was scarce.

Wade No. 3.

Located near and managed by the parties controlling No. 2. Furnace ventilation, pick mining, mule haulage, and employs 8 miners and 6 day hands. Conditions satisfactory, considering the small force employed and the short life of the mine, which will likely terminate during this year. Inspected jointly by Alex. Smith and the writer June 16th.

Conesville No. 1.

Drift, located near Conesville, on the P., C., C. & St. L. R. R. Owned and operated by David Davis, Conesville. J. G. Davis, Conesville, superintendent; J. W. Larr, same place, mine boss. Furnace ventilation, mule and cable haul

age, pick mining, and employs 17 miners and 1 day hand. Accompanied Smith to this mine June 17th. Found idle, conditions favorable, first coal shipment being made December 1, 1907. Notified the managers that an escapementway must be provided by December 1, 1908, or their force employed limited to 10 men. Alex
ship
capo-
lim-

Conesville No. 2.

Drift, situated near No. 1. Owned by the same persons. J. G. Davis, Conesville, superintendent; R. Holdsworth, same place, mine foreman. Furnace ventilation, mule and cable haulage, pick mining, 28 miners and 1 day hand employed. First coal was shipped from this mine October 1, 1907. Two openings are provided, but have only 50 feet of natural strata between them. Visited June 17th, jointly by Alex. Smith and the writer; found idle, no fire in the furnace, consequently a detailed report was omitted. We advised that lawful escapement way be provided ere 12 months from first shipment of coal elapsed.

Conesville No. 4.

Slope, located near No. 2. Owned and operated by same company. J. G. Davis, superintendent; J. F. Murphy, Conesville, mine foreman. Fan ventilation, compressed air mining, mule and cable haulage. Visited in company with Alex. Smith June 17th. Learned it had suspended March 31st and still remaining idle. Manager Murphy and assistants were opening a ditch to remove water from the mine, preparatory for resuming operation about July 1st. Advised that the fan be placed in operation several days prior to starting and remove all standing gases from the mine. All the mines ship coal over the same tippie.

Barnes No. 1.

Drift, formerly reported as Best No. 1. Located near Conesville, O., on the W. & L. E. R. R. Owned and operated by the Barnes Coal and Mining Co., Coshocton, O. Chris Hudson, superintendent; R. N. Barnes, mine boss. Employs 54 miners and 13 day hands. Electric mining, pumping, mule and cable haulage. Joint examination of this mine was made with Inspector Smith on June 18th; ordered extra doors and stoppings to properly distribute the air; wires were recklessly strung. Orders were given for all the necessary repairs. The switch, previously ordered to control the power which is brought from No. 2 mine, was on the ground, but not placed in position. Insisted on its early installment. Fan ventilation.

Barnes No. 2.

Drift, formerly reported as Best No. 2. Owned and operated by the Barnes Coal Co., Coshocton, O. Chris Hudson, Coshocton, is superintendent and mine foreman. This mine is located on the W. & L. E. R. R., near No. 1. Has electric mining, pumping and haulage, employs 44 miners and 15 day hands. June 18th, in company with Alex. Smith, we found the new air shaft, referred to in previous annual report, completed and the fan installed on top. Orders were given requiring safety-holes provided along the motor line and all wires strung in compliance with the rules issued by the Mining Department.

Franklin.

Drift, located on switch leading from P. C., C. & St. L. R. R., near Franklin Station. Owned and operated by the Columbus Coal and Mining Co., Cosho-

octon, O. R. N. Barnes, superintendent, and Grant Holdsworth, mine foreman, both of Coshocton. Furnace ventilation, pick mining, and employs 58 miners and 18 day men. Visited in company with Alex. Smith June 17th, and found idle, and proceeded to the Conesville mines.

GUERNSEY COUNTY.

NOTE.—All mines are working No. 7 coal seam, which runs from 5 to 7 feet, excepting Indian Camp, Union No. 1 and Morris, which are working No. 6 seam, varying from 2 feet 4 inches to 3½ feet thick in this locality.

Eureka.

Operated by the Cambridge Coal and Mining Co., Parkersburg, W. Va. E. R. Brooker, Byesville, O., manager. Slope, 225 feet long, located on the Pennsylvania R. R., near Byesville, O. Eighteen miners and 4 day hands employed. Fan ventilation, electric mining and mule haulage. This mine struck the coal levels in February, 1907, and was written up for last year's report, but from some oversight it failed to appear in the publication. You are aware considerable trouble was given the Department in securing a second opening. June 6, 1908, we found the stairs erected, but the steam in the shaft used for moving the ventilation interfered with travel. Ordered the fan which was on the ground installed at an early date. September 14th, finding no effort being put forth to install the fan, a specific order was given to place it in operation within 15 days or cease operation. September 28th, while the company had made every effort, unavoidable delays on their part had occurred, and time was extended. October 10th, the fan shaft was at the shop for repairs. November 10th, the fan was in operation and conditions approved. My sympathies extend to this company, which opened in a condemned field of coal, and have had nothing but rock entries and an expenditure, I am informed, of about \$75,000, with nothing flattering ahead.

Ideal.

Shaft, 75 feet deep. Located near Byesville on the Pennsylvania R. R. Owned and operated by the Cambridge Collieries Co., Cleveland, O. W. H. Davis, general manager; Geo. Shaw, superintendent; Robert Robinson, mine foreman, east side; D. B. Morse, mine foreman, west side, all of Byesville, O. Employs 288 miners and 103 day men. Fan ventilation, electric mining, hauling and pumping. On March 27th, July 27th and November 11th, conditions approved. November 25th, ordered the dust and fine coal cleaned from the west side motor line and all wires strung to conform with the rules adopted by the Mining Department. Brick stoppings are being made as directed.

Walhonding No. 1.

Owned by the Cambridge Collieries Co., Cleveland O. Shaft, 125 feet deep, situated on the Pennsylvania R. R., near Pleasant City, O. W. H. Davis, Byesville, superintendent; J. M. Burt, Pleasant City, mine foreman. Employs 94 miners and 30 day hands. March 13th and July 2nd, conditions approved. August 24th, found the mine finished and abandoned. Ordered the map filed as statutes direct.

Walhonding No. 2.

Owned and being developed by the Cambridge Collieries Co., Cleveland, O. Shaft, 161 feet deep, located one mile and one-half east of Buffalo on the Eastern Ohio branch of the B. & O. R. R. Will have transportation over both B. & O. and Pennsylvania lines. W. H. Davis, general manager, Byesville, O.; H. S. Gander, superintendent, Pleasant City, O.; John Jones, mine foreman, Buffalo, O. December 17th, found a modern Robison and Shafer improved steel tippie under construction, two Brownell Bullock engine generators set direct connected, 150 K. W., are being installed. Fireproof buildings are erected proper distance from opening. The indications are that this will be a modern mine along all lines. Parties interested expressed a desire to carry 550 voltage on the trolley line. We limited the power to 250 voltage, on the ground that it was less dangerous and sufficient to perform the required work; also recommended that the second opening be started at their earliest convenience and pushed to completion, advising the use of an elevator in same instead of stairs.

Hartford.

Operated by the Cambridge Collieries Co., Cleveland, O. W. H. Davis, Byesville, O., general manager; Harry Cameron, Buffalo, O., has succeeded Chas. Haskins, who resigned to accept a like position with the National Coal Co., as superintendent; Chas. Moss, mine foreman. Shaft, 85 feet deep, situated on the B. & O. R. R., at Hartford, O. Fan ventilation, electric haulage, mining and pumping, employs 184 miners and 57 day hands. August 5th, the mine was found in fair condition. The mine had ceased operation for several months to rebuild the hoisting shaft and build a modern tippie and use the automatic cage, and resumed recently with all the improvements completed. December 8th, tested the fan after it had been operated by electricity instead of steam, finding the air measurement was reduced one-half. Advised a larger drum used to increase the speed of the fan. The mine was idle on this visit over a dispute over additional cleaning of coal for market.

Trail Run No. 1.

Owned and operated by the Cambridge Collieries Co., Cleveland, O. W. H. Davis, Byesville, O., general superintendent; Matt Straugh, Robins, O., mine superintendent; George Slay, Robins, O., mine foreman. Shaft, 72 feet deep, situated near Trail Run on the Pennsylvania R. R. Fan ventilation, electric mining and pumping and cable haulage. Employs 109 miners and 59 day hands. This mine resumed operation May 4th after several months' idleness for general repairs. The shaft was rebuilt, a new tippie with automatic dump cages erected, and the air course cleared of obstruction for 3,500 feet, making a good, independent travelway into the workings. April 6th, investigated the death of Lafayette Herold, a carpenter, who fell from the new tippie and was instantly killed. July 17th, the mine was in operation; conditions improved, excepting protest against alternating electric current, which is used in the mine. We believe it should be excluded by law on account of the increased dangers associated with this current as compared with 250 voltage, direct current. November 19th, investigated the death of Roland Cummins, a driver, who evidently was electrocuted by the third and small finger of his left hand coming in contact with a live wire. December 19th, we investigated the death of John Driscoll, who operated a machine

twenty years in this mine; met instant death from a fall of slate while unloading and placing the machine in position, while the timber men were setting timbers to make the place safe.

Trail Run No. 2.

Located near No. 1. Owned and operated by the same company as No. 1. Same general manager, with A. L. Black, Robins, O., superintendent; Joseph Wootton, Robins, O., mine foreman. Shaft, 112 feet deep, fan ventilation, electric mining, haulage and pumping, and employs 204 miners and 82 day hands. July 7th, found conditions fair as far as we could examine. Room No. 2 on 4th east entry had caved, emitting a large flow of water which flooded that section of the mine. Eight hundred feet of pipe were being laid to remove the water. The evening of July 9th the pumps were operating on this water. The pipe men were extending the pipes as the water lowered in those dip entries, and fired a body of petroleum oil that had escaped from the fall and started a serious fire. Two mules were suffocated by the smoke passing through the stable on the return. I reached the scene on the following morning. Good work had been done toward controlling the fire during the night. Advised that pipes be inserted in each of the stoppings to enable them to ascertain from time to time the enclosed condition. This was executed and men placed at the enclosure to watch the results. Returned the 11th at the request of the miners. Examined the mine before working time, finding conditions safe; the work resumed as usual. October 8th, found ventilation deficient in some sections of the mine, owing to impaired stoppings. Mr. Black, who had recently taken charge, agreed to build cement stoppings and place in conformity with the statutes, and enforce the law requiring the copper blasting tools and storing and boxing of powder.

Detroit.

Operated by the Cambridge Collieries Co., Cleveland, O. W. H. Davis, general manager, Byesville, O.; Thos. Bradberry, same place, superintendent; J. Oldroyd, Ava, mine foreman. Shaft, 185 feet deep, situated on the Pennsylvania R. R., near Ava. Fan ventilation, electric mining, haulage and pumping, and employs 175 miners and 75 day hands. March 2nd investigated fatal accident caused by empty car jumping track, knocking post, letting timber and stone down on the car. March 26th, conditions approved. October 14th, ordered the canvas used in distributing air in the pillar workings on 5 and 6 west and 3 and 4 east entries. The slip has been removed from behind the engine room and a strong retaining wall erected. It is hoped that no further trouble will follow.

Midway.

Slope, 100 feet long, situated near Byesville on the Pennsylvania R. R. Owned and operated by the Cambridge Collieries Co., Cleveland, O. W. H. Davis, superintendent; Samuel Stewart, mine foreman, both of Byesville, O. Employs 51 miners and 29 day men. May 26th, advised an air shaft sunk near the face of the south entries which had crossed a ravine to test the coal under an adjoining hill. July 14th, investigated death of August Baer, injured by a fall of slate while loading coal in a room, and died a few hours later. On recent visit found the mine idle excepting south entries, which were being

pushed, with a discouraging outlook for finding good, workable coal. New shaft was down and the air in good condition. Fan ventilation, electric mining, hauling and pumping.

Blue Bell.

Shaft, 85 feet deep, located on branch of the B. & O. R. R., near Blue Bell, O. Owned and operated by the Cambridge Collieries Co., Cleveland, O. W. H. Davis, Byesville, O., superintendent; J. M. Burt, assistant superintendent; M. L. Hackley, mine foreman, both of Pleasant City, O. Fan ventilation, electric mining, haulage and pumping; 146 miners and 53 day hands employed. July 28th, order the wires strung on insulators instead of being nailed to posts; timbering done in room No. 3, being used for motor road and some safety holes provided along motor haulway. October 16th, tested scales, finding them accurate.

Imperial.

Shaft, 110 feet deep, situated at Derwent on the Pennsylvania R. R. Owned by the O'Gara Coal Co., Chicago, Ill., and operated by the Imperial Coal Co. James Orr, Byesville, O., superintendent; W. A. Oliver, same place, mine foreman. Fan ventilation, electric mining and pumping, cable and motor haulage; 185 miners and 90 day hands employed. February 1st, investigated accident causing the death of John W. Erwin, killed by a fall of slate in his room. April 21st, investigated the death of Samuel Bonom, slate boss, who was killed while riding the front end of the motor by colliding with an empty trip, rearing the front empty up in the motor, crushing deceased against the controller wheel. On both visits general condition of mine satisfactory. Work suspended March 31st, resumed in June; suspended September 17th and continued idle during the remainder of this year.

Ohio No. 1.

Drift, situated near Cambridge, O., on the Pennsylvania R. R. Owned by the O'Gara Coal Co., Chicago, Ill., and operated by the Vivian Collieries Co., Chicago, Ill. Jas. Orr, Byesville, O., superintendent; Jos. Alloway, Cambridge, O., mine foreman. Employs 32 miners and 14 day hands. Work suspended March 31st and remained idle balance of the year. Formerly reported as Nicholson No. 1.

Ohio No. 2.

Formerly reported as Nicholson No. 2. Owned by the O'Gara Coal Co., Chicago, Ill., and operated by the Vivian Collieries Co. Shaft, 65 feet deep, situated near Byesville on the Pennsylvania R. R. Jas. Orr, superintendent; Harry Dudley, mine foreman, both of Byesville, O. Fan ventilation, electric mining and pumping, cable and mule haulage; 132 miners and 50 day hands employed. March 25th, investigated a fatal accident caused by the drawslate breaking and throwing the posts in pillar workings. Ordered the drawslate taken down each crossing hereafter in this section of tender top. April 6th, investigated death of Alonza Shelton, driver, who was injured by fall of slate on the entry March 31st, the day the mine suspended; and mine remained idle until September 17th, when it resumed. Made an inspection on this date, finding conditions considerably impaired from the long idleness. We requested

ventilation improved and the wires strung as directed in the rules governing same. November 24th, conditions improved; insisted upon a continuation until perfect.

Red Oak.

Drift, located near Byesville on the Pennsylvania R. R. Operated by J. R. McBurney, Cambridge, O. John Wilson, same place, manager. Furnace ventilation, compressed air mining and pumping and mule haulage. Employing 20 miners and 5 day hands.. February 8th, found the escapementway had slipped in at the entrance and was unavailable. We ordered it repaired at the earliest opportunity. December 16th, found the escapementway repaired and the mine approved. A scarcity of water inconvenienced the working of this mine considerably during the summer months.

Murray Hill.

Slope, situated near Klondyke on the B. & O. R. R. Operated by the Akron Coal Co., Akron, O. Wm. Rigby, Cambridge, O., superintendent; Clarence Long, Kipling, O., mine foreman. Fan ventilation, electric mining, mule haulage, cable hoist, 39 miners and 16 day hands employed. September 8th, conditions approved. August 28th, a mysterious fire consumed the barn, cremating 7 mules and 1 horse. Other animals were secured and the mine in full operation 10 days later.

Klondyke.

Slope, 150 feet long, located on the B. & O. R. R., near Klondyke, Ohio. Operated by the Loomis Moss Coal Co., Akron, O. James Moss, Cambridge, O., superintendent; Allen Treherne, Kipling, O., mine foreman. Fan ventilation, electric mining and pumping, cable haulage; employs 89 miners and 31 day hands. January 11th, investigated death of Joseph Allender, who was killed by fall of slate while working as a loader in a room with his father. Ordered a discontinuance of the use of a pipe line for negative electric current. September 9th, found wire provided for the return current and pipes detached. Some minor repairs necessary, which were ordered. November 7th, investigated death of Ernest Borrows, driver, who was killed by falling in front of a loaded car on a descending grade. Found general condition of mine satisfactory.

Kings.

Operated by the Morris Coal Co., Cleveland, O. A. Laverty, Cambridge, O., superintendent; David Nutter, Cambridge, mine foreman; H. W. Davis, Lore City, R. No. 3, assistant. Shaft, 100 feet deep, situated on the B. & O. R. R., near Lore City, O. Fan ventilation, electric mining, haulage and pumping, employs 200 miners and 80 day hands. This mine suspended March 31st and resumed September 15th. Examined the condition on the date of resumption and recommended that a new opening be made near the interior of the mine to avoid erecting increased number of brick stoppings.

Old Orchard.

Owned by the Morris Coal Co., Cleveland, O. A. Laverty, Cambridge, O., superintendent; W. A. Alderman, same place, mine foreman. Shaft, 48 feet deep, situated on the B. & O. R. R., near Mineral Siding. Fan ventilation,

electric mining, haulage and pumping; 150 miners and 56 day hands employed. January 25th, investigated death of Andy Alex, who was killed while attempting to cross through a train of empties while the motor was chaining them in on the passway. This mine suspended operation March 31st and remained idle the remainder of the year.

Black Top.

Operated by the Morris Coal Co., Cleveland, O. A. Laverty, Cambridge, O., general superintendent; Thos. Stiff, same place, superintendent; J. S. Hughes, Lore City, O., mine foreman. Fan ventilation, electric mining, haulage and pumping; 136 miners and 47 day hands employed. June 29th, conditions approved, but advised obstructions from falls in the air course be removed and avoid a threatening deficiency of air. Suspended March 31st, resumed April 28th, and worked two-thirds time until July 7th and suspended, remaining idle, as far as producing coal, to the end of the year. December 23rd, a motor road had displaced the rope haulage and a 15-ton Jeffrey motor ordered. Obstruction reduced in the airway and general conditions good.

Cleveland No. 1.

Shaft, 198 feet deep, located near Senecaville on the B. & O. R. R. Operated by the Morris Coal Co., Cleveland, O. Mark Coe, superintendent; Alvin Farus, mine foreman, both of Senecaville, O. Fan ventilation, electric mining, haulage and pumping; employs 135 miners and 48 day hands. August 4th, conditions approved. Mine suspended operation March 31st and resumed operation April 26th, and ran until May 29th, and shut down until July 10th and resumed, continuing operation until September 23rd, when it again suspended and continued idle the remainder of the year. A 125 H. P. high speed engine, 100 K. W. Morgan Gardner generator and an electric pump installed during the idleness. We regret to note that Mr. Coe leaves this mine at the end of this year to take a similar position at Sherodsville, O., under the Somers Coal Co.

West Branch.

Operated by the Clinton Coal & Mining Co., Cambridge, O. Geo. E. Hall, manager, Byesville, O. Slope, 66 feet long, situated on the Pennsylvania switch leading to Ideal mine, near Byesville, O. Fan ventilation, electric mining and pumping, mule haulage and cable hoist. This slope was sunk to the coal by another company in the year 1903. This company took charge May 15th of this year. August 28th, we found the switch laid and the tippie and buildings under construction. November 12th, the escapementway and stairs provided and preparations being made to install fan. Employs 8 miners and 5 day hands. November 25th, fan was in operation and conditions commendable.

Little Kate No. 1.

Operated by the National Coal Co., Akron, O. G. L. Walkenshaw, general superintendent; Chas. Haskins, superintendent; G. W. Chambers, mine foreman, all of Byesville, O. Fan ventilation, electric mining, haulage and pumping; employs 199 miners and 66 day hands. June 5th, found a creep had cut off 3 and 4, 5 and 6 and 7 and 8 west and 3 and 4 and 5 and 6 north entries. Nos. 8 and 9 west entries were being pushed to intersect the enclosed workings beyond the creep. November 27th, advised advance holes drilled in room

23 on 16th east entry, which was approaching the Old Pioneer mine, or the room stopped. Mr. Haskins stopped the room. General conditions approved.

Buckeye.

Operated by the National Coal Co., Akron, O. G. L. Walkenshaw, general superintendent, and Chas. Haskins, superintendent. Slope, 115 feet long, located on a 5-mile switch leading from the Pennsylvania R. R., near Byesville. Lefty Haskins, Byesville, O., mine foreman. Employs 118 miners and 35 day hands. January 4th, tested scales and found accurate. July 1st condition of mine approved. August 6th, accompanied to this mine by Chief Inspector Geo. Harrison and C. L. Cassingham, members of the Mining Commission, and carefully noted all the machinery and mine conditions. October 18th, witnessed Mr. Stevens test his 5½-foot high speed electric fan, which he installed with a guarantee to move 120,000 cubic feet of air per minute against a 1-inch water gauge. The following is the result of the tests:

| | Water Gauge. | Cu. Ft. per Min. | Revolutions per Minute. |
|----|--------------|------------------|-------------------------|
| 1. | 1 in. | 36,480 | 280 |
| 2. | 1-10 in. | 46,620 | 292 |
| 3. | 6-10 in. | 63,000 | 347 |
| 4. | 3-4 in. | 75,600 | 357 |

The writer is free to confess that the above results are exceptionally good for a fan of small dimensions, and we believe that this fan built in size in proportion to the work it is expected to do, without overspeeding same, it will take its place with the modern fans now in use.

Little Kate No. 2.

Slope, 300 feet long, formerly known as Diamond, situated on a switch leading from the B. & O. R. R., near Blue Bell. Owned and operated by the National Coal Co., Akron, O. G. L. Walkenshaw, general superintendent; Chas. Haskins, superintendent, both of Byesville; Chas. Stevens, Pleasant City, O., mine foreman. Employs 33 miners and 8 day hands. July 30th, found both openings down and connected, the tippie completed and the electric hoist being installed. Fearing the slopes might fill with gas, which was generating freely, advised fan installed and put in operation. November 20th, mining was progressing satisfactorily. Advised the use of brick stoppings and copper blasting tools adopted from the beginning in this new mine, if the proper tools could be secured.

White Ash.

Operated by the Puritan Coal Co., Cambridge, O. W. A. Lucas, same place, superintendent; J. B. Morris, Byesville, O., mine foreman. Slope, situated near Byesville, O., on the Pennsylvania R. R. Fan ventilation, electric mining and pumping, mule haulage and cable hoist. September 10th, 24 miners and 9 day hands employed drawing pillars; conditions were approved. October 22nd, we were called to decide in regard to the dangers of trapping the miners by removing any more of the pillars. The company had drawn tracks and pumps intending to abandon the mine. The coal being worked on royalty, the land owner, L. Riddle, demanded the pillars removed as far as the safety of the miners would permit. After a careful examination of the interior, found no threatening danger, other than the usual dangers accompanying pillar work, provided no more coal was removed from the west of the main entry and near

the slope bottom until the pillars on the extreme east and south were drawn back to the bottom. Track and pumps were replaced and work resumed with 8 miners and 4 day hands. November 19th, found them still drawing pillars under the slope and engine room. We again gave orders to cease work at that point until the interior pillars were drawn. On my recent visit found them removing the water and drawing the pillars as directed, which will remove several thousand additional tons of coal from this field. Ordered a shield provided for mining machine.

Puritan.

Operated by the Puritan Coal Co., Cambridge, O. W. A. Lucas, Cambridge, O., superintendent; J. B. Morris, Byesville, O., mine foreman. Shaft, 106 feet deep, situated on the Pennsylvania R. R., near Derwent, O. Fan ventilation, electric mining, haulage and pumping, employs 127 miners and 42 day men. March 24th, finding 36 miners employed, 13 rooms being turned and the escapementway not completed, ordered a cessation of work until the second opening could be finished. May 25th, 2nd opening was made, but stairs not erected; inability to secure lumber given as cause of delay. The lumber arrived and stairs were ordered erected at the earliest opportunity, and the hoisting appliance to be left in operation until the stairs were available, and the mine examined by a competent person with a safety lamp before permitting workmen to enter, and a cut-around made at the shaft bottom, and to cease carrying tools on the cage with men. June 4th, found stairs completed and escapementway available and conditions fair. August 7th, accompanied by Chief Inspector Harrison, we investigated the death of Geo. M. Nichols, machine man, who was injured by machine knocking the post while being moved around a curve, causing the fall of slate on deceased, who was following the machine. We found, on account of scarcity of wire, pipe lines were being used in rooms for negative current. Orders were given to detach them at once. August 27th, pipes were disconnected from wires and a fire boss employed. August 30th, investigated death of Cleo Phillips, who was found dead on an ascending cage with his head crushed from dragging between cage bottom and wall. December 9th, investigated cause of explosion of gas that seriously burned Wm. Croft and wrecked four doors and three stoppings. The explosion occurred December 8th. The mine had been idle since December 5th and had not been examined by the fire boss during this idleness. Room No. 2 on 2nd south entry had fallen in, emitting a flow of gas; room No. 1 on same entry had been down for some time. The gas accumulated in both rooms back to the first breakthrough. Repairs were being made in the down cast shaft and the fan had been stopped a couple of hours. The mine boss sent Mr. Croft to the fall in room No. 1 to secure some clay to calk a new water trough. The gas was ignited by his open light, wrecking room No. 2, blowing a box containing a full keg of powder 30 feet, but did not explode. A careful examination was made of the entire mine, finding it free from standing gas excepting in the fall that caused the first explosion. We ordered a check placed on the entry and the air carried through those rooms. Returned on the 11th inst., at the request of the committee: made a thorough inspection of the mine, finding conditions acceptable and the entire mine free from standing gas. Again ordered that no person be allowed to enter the mine while idle or working unless it had been examined by a competent person with a safety lamp.

Forsythe.

Operated by the Forsythe Coal Co., Cambridge, O. Homer Forsythe, general superintendent; J. P. Davis, superintendent; W. A. Alderman, mine fore-

man, all of Cambridge, O. Slope, 110 feet long, situated near Mineral Siding on the B. & O. R. R. Fan ventilation, electric mining, pumping and haulage and chain hoist; employs 176 miners and 58 day men. June 30th, found three violations of the breakthrough law. The places affected were promptly stopped. December 8th, considerable dust had accumulated along the motor road and some of the miners were ballasting their roads with bug dust; all dust was ordered removed from the mine. We were informed that the rules governing the handling of powder were not strictly obeyed, but J. P. Davis, who recently took charge, was arranging to carry out the rules to a letter.

Leatherwood No. 2.

Operated by the Leatherwood Consolidated Coal Co., Toledo, O. T. E. Alexander, manager, Cambridge, O. Drift, situated on the B. & O. R. R., near Cambridge, O. Fan ventilation, electric mining and haulage; employs 53 miners and 21 day hands; but little work has been done during this year, and in a general way has been idle since March 31st. A little domestic and boiler coal has been produced by a couple of miners. On my recent visit informed Mr. Alexander that his mine map was delinquent. He agreed to have it extended at an early date.

Little Trail Run.

Operated by the Byesville Coal Co., Byesville, O. David Thomas, Byesville, O., manager. Slope, 160 feet long, situated on the Pennsylvania R. R., near Byesville, O. Fan ventilation, electric mining and haulage and cable hoist; employs 43 miners and 14 day hands. March 12th, we ordered stoppings repaired and advised the erection of new stairs in the manway and live wires boxed in along stairway. May 25th, new stairs erected; mine idle. December 1st, ventilation not satisfactory; could not accept independent travelway until it was properly timbered and wires strung according to the rules issued by the Mining Department. Ordered brick stoppings or their equivalent constructed, copper blasting tools provided and mining machines equipped with shields.

Guernsey Brick.

Drift, situated near Byesville on the Pennsylvania R. R. Operated by the Guernsey Clay Co., managed by Chas. Rabe, both of Cambridge, Ohio. Furnace ventilation, pick mining, mule haulage; employs 9 miners and 2 day hands. June 25th and November 18th, conditions approved. Mr. Rabe is to be commended for the vigilance he exercises in guarding the dangers associated with the faulty top overlaying this mine. A superior quality of building block is being produced from the underlaying clay mixed with drawslate and surface clay. The surplus coal not used for fuel is disposed of for domestic purposes.

Union No. 1.

Operated by the Consolidated Ohio Coal Co., Toledo, O. C. H. Kline, superintendent; P. S. Williams, mine boss, both of Birds Run, O. Drift, situated on the Pennsylvania R. R., near Birds Run. May 28th, one man was employed in this mine producing coal to fuel the plant while furnishing power to the Indian Camp mine. Conditions approved.

Indian Camp.

Drift, located near Union No. 1, operated and managed by the same persons. Furnace ventilation, electric mining and haulage. May 28th, 18 miners and 12 day hands employed. Conditions approved, but the Long Wall system was not proving a success, owing to the continuous breaking of the top along the working faces. On recent visit found both mines suspended about June 1st, and remained so during the remainder of the year.

**SMALL MINES EMPLOYING LESS THAN TEN MEN. (All Drift Openings.)
(Guernsey County.)****Morris.**

Operated by John I. Hirsh, Canton, O. Situated near Post Boy, O. Found idle during the year when traveling through that section.

Burris.

Operated and managed by James Burris, Cambridge, O. Drift, located four miles east of Cambridge on the National road. Furnace ventilation, pick mining, mule haulage, and employs from 3 to 7 men.

Wild Cat.

Operated and managed by James Stoner, Cambridge, O. Drift, located south of Cambridge. Furnace ventilation, pick mining, mule haulage; 2 to 5 men employed.

The following named small mines are in No. 8 coal seam, which is 4 feet thick, situated near Quaker City and Salesville.

Keenan.

Operated by C. E. Keenan, Quaker City, O. November 17th, we gave orders to provide an air shaft before further operation could be done.

Carter.

Owned and managed by J. B. Carter, Quaker City, O. November 17th, ordered an air shaft provided before mining any more coal.

Hollingsworth.

Drift. Operated by Dr. Hollingsworth, Quaker City, O. Asburry Carpenter, same place, manager and miner. November 17th, a 2nd opening was being made.

B. L. Galloway.

Operated and managed by B. & L. Galloway & Son, Quaker City, O. November 17th, a 2nd opening was being made, but poorly timbered. Advised more substantial timbering executed.

E. B. Galloway.

Owned and operated by E. B. Galloway, Quaker City, O. Employs 2 miners. Conditions approved.

Webster No. 1.

Operated by Waldo Webster, Quaker City, O. We found 1 miner employed and working 75 yards ahead of air course. Ordered Mr. Webster to drive the air course to the face, making breakthroughs every 60 feet, before producing any coal at the interior.

Webster No. 2.

Operated by Clyde Hays, Quaker City, O. Two miners employed. Ordered connection made to a nearby opening for ventilation, November 17th.

Montgomery.

Operated by J. W. Montgomery and managed by L. K. Dennis, both of Quaker City, O. Two miners employed. Ordered obstruction from air course, November 17th.

Sayer.

Operated by Samuel Sayers, Quaker City, O. The bottom and main entry were being blown up by owner and sons to secure drainage for a body of water collected at the face when visited, November 17th.

Hall.

Operated by Jabo Cleary, Spencer Station, O. Employs 3 miners. November 17th, ordered an air shaft provided without delay

McCormick.

Operated by Clarence McCormick, Salesville, O. Employs from 1 to 3 men.

Spencer.

Operated by Richard Spencer, Quaker City, O. Employs 2 miners.

Bates.

Operated by Richard Bates, Quaker City, O. Two miners employed.

Lingo.

Abandoned. L. L. Lingo has quit the coal business.

Briar Hill.

Owned by D. W. Nicholson, Cambridge, O. Operated by Alex Todd, lessee, during this year. Employs 3 miners and 1 day hand, natural ventilation, pick mining, mule haulage. October 7th, at the request of the owner, investigated condition of the main entry where pillars were being drawn, and advised that

the remaining pillars be left until the interior pillars were removed. The owner has since died. Wm. Nicholson has taken charge, relieving Mr. Todd about the end of the year.

NOBLE COUNTY.

Noble.

Owned by the O'Gara Coal Co., Chicago, Ill. Operated by the Imperial Coal Co., Cleveland, O. James Orr, Byesville, superintendent; J. A. Collins, Belle Valley, O., mine foreman. Shaft, 189 feet deep, situated near Belle Valley on the Pennsylvania R. R. Employs 110 miners and 60 day hands. June 26th, was accompanied by the Chief Inspector on an official visit. Found the mine had suspended operation March 31st and still idle. On December 30th, found the mine remaining idle, with no knowledge of an early resumption. Far ventilation, electric mining, haulage and pumping. The miners generally have secured employment elsewhere.

Laura.

Operated by the Belle Valley Coal Co., Cambridge, O. T. E. Richards, superintendent, Caldwell, O.; W. J. Matheney, Belle Valley, mine foreman. Shaft, 185 feet deep, located at Coal Ridge, O., on the Pennsylvania R. R. Fan ventilation, electric mining, haulage and pumping; employs 167 miners and 62 day hands. July 9th, the territory behind the fault had proven satisfactory and was being developed as speedily as possible. A pair of rock entries was being driven through the fault connecting the main entry, reducing the distance to the shaft bottom 1,900 feet. October 21st, pillars were being drawn in main south and No. 1 and 2 west entries, while territory was being developed in the new field. On recent visit found the partition in shaft repaired, the fault pierced by one of the entries, the haul shortened and a good output of coal daily. Advised the parallel rock entry driven the remaining 60 feet as an improvement on the ventilation.

Coal Run.

Operated by the Coal Run Coal Co., Cambridge, O. Robert Aultman, Hiramburg, O., manager. Drift, situated on O. R. & W. R. R., near Hiramburg. Natural ventilation, pick mining, mule haulage; employs 10 miners and 4 day hands. July 15th, a new entry was being driven from daylight to straighten the present crooked haulway. Recommended the erection of a furnace at an early period. This is No. 8 coal, 4 feet thick.

Marion.

Operated by the Marion Coal Co., Whigville. J. W. Young, Sarahsville, manager. Slope, 75 feet long, located on the O. R. & W. R. R., near Steamtown. Furnace ventilation, mule and cable haulage, pick mining; employs 8 miners and 2 day hands. First shipment of coal was made June 11, 1908. Informed Mr. Young that an escapementway must be provided within one year from that date or his force limited to 10 persons in the mine at any time.

December 18th, conditions approved. Advised a device arranged to derail runaway trips on the incline, which is 600 feet long, and avoid them going into the slope, endangering life and property on the bottom landing.

WASHINGTON COUNTY.

There being no commercial mines developed in this county, we have made no inspection in that county since it was consigned to this district. We understand some small domestic mines are operated in this county.

MINES VISITED IN OTHER DISTRICTS.

Seventh District.

May 12th, accompanied Chief Inspector Harrison to Pocock with other inspectors in consultation over dangers from water.

May 15th, accompanied W. H. Miller and Thos. Morrison to N. F. P. No. 2 mine in a consultation over threatening danger from water.

Third District.

September 1st, 2nd and 4th, assisted W. C. Wiper at the Cannelville mines. September 23rd and 24th, accompanied the Mining Commission to Cannelville mines and others.

September 25th, assisted W. C. Wiper investigate a fatal accident at Upson mines, Shawnee.

TUSCARAWAS COUNTY.

NOTE—Massillon, Peacock, Huff Run, Acme and Holden's mines are working No. 5 coal, and Baltic is thought to be working this seam. All other mines in this county are working No. 6 coal seam, which ranges from 3 to 4½ feet in thickness.

Mullins No. 1.

Operated by the Mullins Coal Co., Cleveland, O. Wm. Sorg, superintendent; Robert Sewell, mine foreman, both of New Philadelphia, O. Drift, six miles northeast of New Philadelphia, C. & P. R. R. Fan, electric haulage and both electric and compressed air mining. In addition to both systems of mining, blasting coal from the solid is practiced to some extent. Employs 86 miners and 43 day hands. January 21st, found mines No. 1 and No. 2 connected. Coal was being hauled from No. 1 to No. 2 mine. The operating of a door at the point connected baffled the circulation of air in No. 1 mine. Advised that this coal be taken out No. 1 mine and abandon the operation of said door. The new air course around the creek was completed; the volume of air was again normal at the fan.

Mullins No. 2.

Operated by the James Mullins Coal Co., Cleveland, O. Thos. Suthern, superintendent; Owen Donahue, mine foreman, both of New Philadelphia, O.

Drift, situated on the C. & P. R. R., near New Philadelphia. Fan ventilation, electric haulage and compressed air mining. February 5th, found that a mysterious fire had totally destroyed the engine and power house on February 2nd, and matters awaiting adjustment of insurance.

Mullins No. 3.

Operated by James Mullins Coal Co., Cleveland, O. Thos. Suthern, superintendent; John Hale, mine foreman, both of New Philadelphia. Drift, situated near New Philadelphia, O., on the C. & P. R. R. Employs 54 miners and 9 day hands. Fan ventilation, pick mining, electric haulage. February 5th, investigated complaint concerning the gasoline engine which operated the recently constructed fan. While we believe that the use of gasoline should be excluded from in and around mines, we found this one carefully arranged, reducing the dangers from fumes and fire to a minimum. This mine receives its electric power from No. 2 mine, consequently the conflagration laid this mine idle for the time being.

East Goshen No. 1.

Operated by the East Goshen Coal Co., Cleveland, O. Wm. Empfield, superintendent; Harvey Studer, mine foreman, both of New Philadelphia. Drift, situated near Vickers on the C. & P. R. R. Furnace, cable haulage, pick mining. Work suspended February 26th, and was still idle May 14th, when my last visit was made. Three men, in the capacity of roadman, water hauler and furnace man, employed, assisting the boss in keeping up repairs.

East Goshen No. 2.

Operated by the East Goshen Coal Co., Cleveland, O. Wm. Empfield, superintendent; John A. Sullivan, mine foreman, Vickers, O. Slope, 125 feet long, situated on the C. & P. R. R. near Vickers. Fan ventilation, chain hoist, electric haulage and compressed air mining; employs 95 miners and 34 day men. May 14th, accompanied by Thos. Morrison, Inspector Sixth District, and W. H. Miller, of Seventh District, examined the modern compressed air plant recently installed and giving general satisfaction. The air course was cleaned out to the terminus, affording an independent traveling way for the men. Mr. Empfield, the veteran coal man, has reason to be proud of these modern improvements, which class the mine with the leading mines of the district.

West Goshen.

Operated by Cleveland and Tuscarawas Coal Co., Cleveland, O. C. L. Casingham, Cleveland, O., superintendent; Emery Ankney, Joyce, O., mine foreman. Drift on Pennsylvania R. R., near Joyce station. Fan, electric mining, electric and cable haulage. Owing to hard mining, solid blasting of coal is practiced extensively. Employs 89 miners and 29 day hands. May 22nd, ventilation approved; a new opening just completed at the interior of the mine will afford unlimited amount of air when the fan is placed at that point, but ordered the wiring strung as directed by the recent rules issued by the Mining Department. Complaints were offered concerning the high speed of the trip when hauling the men in. We rode in on the trip with the men on this occasion and found no cause for complaint, and requested the motorman to continue the same precaution hereafter when hauling men.

Goshen Shaft.

Operated by the Goshen Coal & Mining Co., Cleveland, O. D. P. Loomis, superintendent; Peter Reis, mine foreman, both of New Philadelphia, O. Shaft, 100 feet deep, situated on the C. & P. R. R., near Klondyke, O. Fan ventilation, mule haulage, compressed air mining; 68 miners and 37 day hands employed. February 6th and 11th, conditions approved.

Wainwright No. 6.

Operated by Midvale Goshen Coal Co., Cleveland, O. Frank McIntosh, superintendent, New Philadelphia, O., and James Hardridge, mine foreman, Wainwright, O. Slope, 300 feet long, situated on the B. & O. R. R., at Wainwright. Fan ventilation, electric mining and haulage; employs 86 miners and 22 day men. January 23rd, one violation of the law regarding breakthroughs was found and remedied. May 11th, tested scales and found accurate. Accompanied the Mining Commission on their investigation of this mine. James Hardridge had succeeded Frank McIntosh as superintendent, and Alex McIntosh, mine foreman, both of Wainwright. Ordered stoppings repaired leading the air to 1 and 2 west entries.

Beaver Dam No. 1.

Operated by the Beaver Dam Coal Co., Cleveland O. O. L. Chalker, New Philadelphia, O., superintendent; John Norton, Roswell, mine foreman. Shaft, 70 feet deep, located on the C. & P. R. R., near Klondyke. Fan ventilation, electric haulage and pick mining; employs 60 miners and 24 day hands. May 24th, the manway had been cleared and timbered with light timber. Ordered it more substantially timbered and more safety holes made along motor road; also advised a more adequate fan provided to displace the Stine fan, which fails to do the required work.

Beaver Dam No. 2.

Operated by the Beaver Dam Coal Co., Cleveland, O. O. L. Chalker, New Philadelphia, superintendent; Elmer Tidrick, Midvale, O., mine foreman. Shaft, 86 feet deep, situated on the B. & O. R. R., near Midvale, O. Fan ventilation, electric haulage; solid blasting is the method of mining the coal; 69 miners and 26 day hands employed. January 22nd, the foundation was laid for a larger fan, but the fan had not arrived. Conditions approved by urging the early erection of an adequate fan. May 21st, owing to a creep crushing stoppings 7 and 8 and 11 and 12 west entries were deficient in ventilation. We advised that 7 and 8 entries, affected by the creep be stopped, open the door admitting the air to travel on to the advance workings, and again urged the erection of an adequate fan.

Indian Hill.

Operated by the Ohio Coal and Coke Co., Cleveland, O. John Ronald, Uhrichsville, manager. Drift, situated on the P., C., C. & St. L. R. R., near Uhrichsville, O. Electric mining, fan ventilation and cable haulage; employs 56 miners, 19 day hands. February 10th, conditions approved. April 3rd, we were called to advise concerning a creep threatening the main airway of the mine and a serious loss of T iron. The company had made every effort to secure an open airway before the April stop, and failed by 25 feet of entry. Miners fearing they would violate their allegiance to the organization, refused to allow the

connection to be made. After carefully investigating the situation, finding it would incur a serious loss to the company and a long idleness to the miners after a settlement was reached, and the company agreeing no coal should be brought from the mine if the connection could be made and the T iron drawn through the creep until a settlement was reached, we consulted President Green over telephone, stating the position as it existed, and was authorized by him to proceed and save the property and air course; the men thus being relieved of violation, soon placed the mine in a safe condition and recovered and stored the iron in safe quarters.

Morey Ridge.

Operated by C. J. Nungesser, Beldler, O. Alex. E. Winkler, same place, mine foreman. Drift, located near Beldler, O., on the B. & O. R. R. Furnace ventilation, pick mining, mule haulage; 15 miners and 3 day hands employed. February 28th, approved the condition of the mine, but had some trouble securing the annual statistics. Mr. Nungesser maintained that the state should pay the clerk hire while tabulating them. We convinced him that it was his duty to produce the statistics. He made them out in good shape while we were inspecting the mine. We left feeling assured that Mr. Nungesser would be among the first to report 1908 statistics.

NOTE.—Owing to many of the mines being idle I did not visit them before leaving Tuscarawas County during this year, therefore I have not reported them. I gave Mr. Smith a list of these mines and he would visit and report them, so you should get the county complete.

SIXTH DISTRICT

ALEX SMITH.

COMPOSED OF THE COUNTIES OF TUSCARAWAS, COLUMBIANA
AND COSHOCTON.

Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio:

Dear Sir:—I herewith submit my report of the Sixth Mining District, composed of the counties of Tuscarawas, Columbiana and Coshocton, covering the period from my appointment, June 1 to December 31, 1908.

During the period covered by this report, 155 visits were made, 28 permanent improvements are recorded, consisting of 2 furnaces, 5 fans, 4 air shafts, 8 second openings, 2 safety catches and 7 stairways.

There were 6 new mines opened, 5 suspended and 1 abandoned; 11 pairs of scales were tested, all of which were found correct with the exception of one.

I very much regret to have to record 7 fatal accidents in my district for the seven months covered by this report. Two in Columbiana County, 4 in Tuscarawas and 1 in Coshocton. Four were killed by falling rock, 1 by falling coal, 1 by a shot through the rib and 1 by powder exploding while he was taking it from the keg. One, Joseph Keith, was found dead in the Wardell mine near Ulrichsville on the morning of December 1st, but no evidences of accident or foul air could be found in the mine, which I visited the same day.

Owing to the suspension of work on April 1st, and which lasted many weeks, due to the expiration of the joint scale agreement between the operators and miners, the mines were left in poor condition, some of which are still suspended and others have had a little work, which has created a condition in many mines to almost work their ruin; but as work is getting better the mines are being put into better condition, and since several new laws came into operation during the year it has necessitated many changes, which, owing to the slow work, has made the law slow of application; but I am pleased to note that in almost every place visited both miners and operators are getting into line with the law.

I cannot close this report without first submitting to you my apprehensions of dire calamity in some of our solid shooting mines, especially in those mines worked on the single entry system, where men are blasting off the solid and drilling holes away ahead of any cutting and using powder without restraint.

Doors in those mines are generally found in poor condition. Owing to heavy blasting and small space of single entry, these low coal, solid shooting mines are generally expensive to operate, and are equally hard on the miner to produce the required amount of coal to make a reasonable day's wages, but the time has arrived when something ought to be done to avoid calamity in the future by a change of system.

In conclusion, I wish to thank you for your advice and assistance, which I very much appreciate, and which has been of much service to me in my official duties.

Respectfully submitted,

ALEX. SMITH, Mineral City, Ohio.

December 31, 1908.

Inspector Sixth District.

COLUMBIANA COUNTY.

Garside.

This mine is located two miles northeast of Salineville. Transportation C. & P. R. R. Operated by the Big Vein Coal Co., of Cleveland, O. E. G. Marshall, superintendent; Thomas Thomas, mine boss, both of Salineville, O. Shaft, 200 feet deep. Coal 5½ feet thick; 125 miners and 34 day hands inside and 13 outside are employed. All coal mined by Jeffrey machines.

On June 4th, this mine was visited in company with Chief Inspector Harrison and Inspectors W. H. Miller and Thos. Morrison, to ascertain to what extent it was damaged from the effect of the explosion of May 27th, causing the death of two men and the death of a third who went to their rescue.

The shaft at and near the bottom was found in fearful condition; buntings, guides and partitions blown out and loaded cars blown into sump, making it impossible to operate cages to shaft bottom. A ladder was provided for that purpose, but conditions were found to be such that it was decided to order the shaft repaired and circulation restored before anything further was attempted, and made arrangements to return as soon as notified.

On June 22nd, in company with Inspector Morrison, the mine was found in dreadful condition, everything indicating that the force of explosion was toward the shaft. In the east main entries cars were thrown about in all directions, but in the north face of that side of the mine we found that the force had been much greater than in the butt entry, and stoppings (of building tile) were completely torn out and irons twisted in every shape.

Gas was found at the 3rd breakthrough from the shaft on the east side and also at the neck of the north entry, 200 feet from the shaft at the 1st north off east. A great quantity of gas was found in the 2nd south face entry, and two doors were found blown inward. One on the cross-cut leading to the north entries and one on the main between south entries. The shaft had just been completed on this visit and lined in very good shape.

Orders were given to build stoppings beginning near shaft for the purpose of securing circulation, that fan must be kept running continuously, that no open light be used and that the Department must be notified before starting work.

On July 6th, in company with Inspector Morrison, we again inspected mine. All stoppings were about completed and air was found circulating in reasonably fair condition. No gas was found on this visit and permission was given to resume work. A large, slow speed fan was recommended to take the place of the 6-foot fan then in use. Twenty-one day hands inside and 8 outside were employed cleaning up.

On October 8th I again inspected this mine and found it in very fair condition, except stone, which was cutting up in entries, giving the management much trouble. Quite a quantity of gas was found giving off in 11 and 13 face entries, with about 8,000 feet of air playing directly upon it, but was not sufficient to dilute it. Those entries were not working at this time. The management was erecting a 20-foot Brazil fan, which is now in operation and giving good results.

Strabley.

Located at Salineville on the C. & P. R. R. Operated by Strabley Mining Co., Salineville, O. J. S. Strabley, superintendent; E. H. Blazie, mine boss, both of Salineville, O. Drift opening to the No. 7 seam, 5 feet thick. Fan ven-

tilation. Machine mining and motor haulage; 41 miners and 11 day hands employed. Two visits were made, July 7th and October 9th. Mine was found in fair condition except feed wires and manholes, which were ordered to conform with the law. This is an old mine; coal very faulty, making it rather difficult to ventilate, but on my last visit air was found in fair condition.

Old Slope.

Located at Salineville on the C. & P. R. R. Operated by the Ohio and Pennsylvania Company, Cleveland, Ohio. John Walsh, superintendent; Geo. Robison, mine boss, both of Salineville, O. Slope opening to No. 7 seam, $4\frac{1}{2}$ feet thick. Machine mining. Motor and mule haulage; 80 miners, 22 day hands inside and 10 outside employed. Two visits made, June 23rd and October 7th. Mine on each visit was found in poor condition, owing to the system of mining. So many cut-offs are made through wide rooms that air was found in poor condition. Orders were given to remedy this condition. Also to have wires changed and machine shields placed on machines to conform to law.

New Slope.

Located at Salineville on C. & P. R. R. Operated by Maher, Bettis & Co., Salineville, O. Pat Maher, manager. Slope opening to No. 7 seam, 4 feet thick. Machine mining. Fan ventilation. Motor and mule haulage. Employs 24 miners and 6 day hands. Mine was found in poor condition. Stoppings and doors were ordered repaired to better circulate air. Two visits made, July 8th and October 6th.

Beech Grove.

Located on C. & P. R. R., at Salisbury. Operated by the Ohio Coal and Coke Co., East Liverpool, O. Isaac Thomas, manager, Irondale, O. Drift opening to No. 3 seam, $3\frac{1}{2}$ feet thick. Fan ventilation. Pick and machine mining. Rope and mule haulage. Thirty-nine miners and 15 day hands are employed. Two visits made, July 9th and December 15th. Mine was found idle on both visits. On first visit mine was in poor condition. On last visit condition was much improved, but feed wires we found in bad condition. Orders were given to place them in accordance with the law. A new slope to clay mine, 300 feet long at a grade of 33 per cent., is just completed to supply a plant just being erected here.

State Line No. 3.

Located at East Palestine, O., on P., Ft. W. & C. R. R. Operated by the National Fire Proofing Co., Pittsburg, Pa. W. G. McConnell, Toronto, O., superintendent; Charles Jones, East Palestine, mine foreman. Drift opening to No. 7 seam of coal, $2\frac{1}{2}$ feet thick. Clay beneath coal bed, $3\frac{1}{2}$ to 4 feet thick, is worked in connection with coal. Has fan ventilation. Rope and mule haulage. Sixteen miners and 6 day hands employed. Two visits made, July 28th and December 22nd. Mine was suspended from August 1st to December 1st. Condition approved.

Big Walnut.

Located two miles west of Washingtonville, O., on the Y. & O. R. R. Operated by Card & Prosser Coal Co., Cleveland, O. Thos. Prosser, Lisbon, O., superintendent; J. F. Waters, Washingtonville, O., mine boss. Slope opening

200 feet long to No. 3 seam, 3 feet 3 inches thick. Fan ventilation. Rope and mule haulage. Single entry system. Pick mining. Eighty-seven miners and 19 day hands are employed. Three visits made.

June 19th, we visited mine to investigate cause of fatal accident to James Thompson, a driver, who was killed by a fall of rock at the gathering parting, and the injury to James Atkinson at the same time and place. This was a very unfortunate accident, but the great wonder is that three men were not killed in place of one, as all three were about together.

July 31st, we visited mine and found it in fair condition. On November 21st, in company with Inspector Morrison, we made investigation of accident to Elden Holt and Joseph Snyder (shot firers), who were burned by exploding shots igniting smoke from solid shooting shots in narrow places. They were 460 feet from shots when burned. This practice, so much indulged in by miners, is likely to produce a calamity at any time, and something ought to be done to minimize the danger.

Klondyke No. 7.

Located at Lisbon on the Erie R. R. Operated by the Card & Prosser Coal Co., Cleveland, O. Thos. Prosser, superintendent; Ralph Lee, mine foreman, both of Lisbon, O. Drift to No. 6 seam, 2 feet thick. Worked on the single entry system. Electric machine mining, motor and mule haulage. Fan ventilation. Two visits made, June 25th and October 16th. Mine was in fair condition. On last visit a holing had been made through 1st right into an old drift, which will be cleaned up and air brought in at head of workings and act as a travelingway for men. Twenty miners and 8 day hands employed.

West Pittsburg.

Operated by Card & Prosser Coal Co., Cleveland, O. Thos. Prosser, Lisbon, O., superintendent; A. T. Davis, Franklin Square, mine boss. Shaft opening, 157 feet deep to No. 3 seam, $3\frac{1}{2}$ feet thick. Fan ventilation, electric machine mining and mule haulage. Fifty-five miners and 15 day hands employed. This mine was suspended almost all summer on account of so much water and until adequate pumps could be secured to handle it. Was visited December 17th and found in fair condition, except in the Lewis entry, on which ventilation was deficient, but a breakthrough was made same day which will put mine in good condition for air. Catches were tested and failed to work, and orders were given that no men should be lowered or hoisted until they were remedied. Notified in a few days by Secretary C. C. Smith, of L. U., U. M. W. of A. at that mine, that catches had been repaired and tested in the presence of committee and were all right. Tested two pairs of scales and found both correct.

Salem.

Located three miles east of Salem on the Y. & O. R. R. Operated by the Salem Coal Co., Salem, O. Wm. Dunn, Salem, O., superintendent; Thos. McCullum, Washingtonville, O., mine foreman. Drift opening to No. 3 seam, $3\frac{1}{2}$ feet thick. Pick and electric machine mining. Fan ventilation. Motor and mule haulage. Single entry system. Thirty-eight miners and 17 day hands employed. As railroad is away above the level of drift, cage hoist is used to put coal on tippie. Mine on this visit, September 9th, was in poor condition, overrun with water on account of the breaking into old works from No. 6 butt entry. Air was also deficient. Management and a new mine boss (Mr. McCullum) promise fair to overcome all these difficulties.

Neihiesel.

Located near Leetonia, O. Operated by the Neihiesel Coal Co., Leetonia, O. Fred J. Neihiesel, superintendent; H. C. Somers, mine boss, both of Leetonia. Slope, 300 feet long to No. 3 seam, 3 feet 3 inches thick. About 10 miners and 2 day hands employed. Fan ventilation. Rope and mule haulage. Visited September 10th and condition approved.

Fairfield No. 2.

Located at New Waterford on P., Ft. W. & C. R. R. Operated by the Fairfield Coal Co., Cleveland, O. John Moon, superintendent; Wm. Shasteen, mine boss, both of New Waterford, O. Drift opening to No. 6 seam, 3 feet thick. Fan ventilation. Cable haulage. Single entry system. Pick mining. One hundred and ten miners and 19 day hands employed. Two visits made, July 29th and December 23rd. On each visit I found mine in fair condition, except that a great many faults are encountered in the coal seam which are giving both management and miners much trouble. On first visit I tested scales and found them correct.

Fairfield No. 3.

Operated by same company as No. 2 and under the same management. This is a new mine just opened into No. 6 seam near No. 2. Drift opening. Rope and mule haulage. Pick mining. Furnace ventilation. Twelve miners and 4 day hands employed. Visited December 23rd and condition approved.

State Line No. 1.

Located at East Palestine, O., on P., Ft. W. & C. R. R. Operated by the State Line Coal Co., Cleveland, O. Hugh Laughlin, superintendent; Geo. Suthern, mine boss, both of East Palestine, O. The tippie and buildings and 1,300 feet of drift are in Ohio, but at present all coal is mined in Pennsylvania and under that mining department. One hundred and eighty-five miners and 29 day hands employed.

Prospect Hill No. 1.

Located at East Palestine on P., Ft. W. & C. R. R. Operated by the Prospect Hill Coal Co., East Palestine, O. Grant Hill, superintendent; Thos. Stackhouse, mine foreman, both of East Palestine, O. Slope opening to No. 6 seam, 3 feet thick. Mined by compressed air machines. Fan ventilation. Rope and mule haulage. Sixty miners and 15 day hands employed. Air was found weak in places, but otherwise mine was in fair condition. A good second opening is made. We advised the reversing and recasing of fan and air brought in at second opening. Third right entry was going toward a large body of water. We ordered holes drilled ahead and at least 100 feet of solid coal left between workings as shown by map. Two visits made, July 30th and December 21st. Mine has been suspended since August and is still idle.

Prospect Hill No. 2.

Located two miles west of East Palestine on P., Ft. W. & C. R. R. Operated by same company as No. 1. Grant Hill, superintendent; Wm. Morris, East Palestine, mine boss. Drift opening to No. 6 seam, 3½ feet thick. Furnace ventilation. Mule haulage. Pick mining. Eighteen miners and 3 day hands

employed. A new second opening for manway was just about completed on my visit July 30th. Coal is very faulty. Mine suspended operations in August and was still idle December 21st.

Delmore.

Located about 1½ miles southwest of Leetonia on the Erie R. R. Operated by the Delmore Coal Co., Leetonia, O. H. D. Hlleman, superintendent; Daniel McGrath, mine boss, both of Leetonia, O. Slope opening 360 feet long to No. 3 seam, 3½ feet thick. Fan ventilation. Cable and mule haulage. Pick mining. Forty miners and 9 day hands employed. Two visits made, September 11th and December 18th. On first visit air was in poor condition. Orders were given to remedy certain defects. On second visit mine was in good condition. Two pairs of scales tested and found correct.

New House.

Operated by the Harriot Coal Co., Lisbon. C. C. Harriot, Lisbon, Ohio, manager. Situated on the P., L. & W. R. R., near New House, O. Drift opening to No. 6 seam, 3 feet thick. Motor haulage and electric machine mining. Furnace ventilation. Single entry system. Forty-three miners and 11 day hands are employed. Visited December 16th and found in poor condition for air. Plenty at the inlet and outlet, but not well conducted. Orders were given to hang doors and change ventilation to better condition in the mine as soon as possible.

Pleasant Valley.

Located at Negley on the P., L. & W. R. R. Operated by the Negley Coal Co., Negley, O. P. H. Murphy, Negley, manager. Drift to No. 6 seam, 3 feet thick. Pick mining, mule haulage. Furnace ventilation. Eighteen miners and 4 day hands employed. Mine visited October 15th and conditions approved, except some timbers in mouth of mine were ordered renewed.

McNab.

Located near Salem and operated by the B. & B. Coal Co., Pittsburg, Pa. H. C. Buck was superintendent on my first two visits. On my third, Val Eichenlaub had been installed as superintendent. John Brady, mine boss. Shaft opening to No. 3 seam, 250 feet deep and 3 feet thick. Exhaust steam is used to ventilate. Pick and machine mining. Thirty miners and 9 day hands employed. Four visits made. June 26th and October 14th, mine was found in fair condition. On October 30th, rope broke and catches failed to hold. Cages went to bottom. On November 6th I visited mine to test catches which failed to work, and mine was ordered shut down until catches could be placed on cages. On November 14th, again visited mine to test new safety catches, which worked effectively, and men were permitted to resume work. The management seems very much disposed to comply with all the requirements of the law, and have recently, at some expense, taken live wire out from holisting shaft and put new stairway in the old shaft 150 feet deep, which is very commendable.

Wheat Hill.

Located at East Palestine, O., and operated by the Wheat Hill Coal Co. James Fleming, East Palestine, manager. Drift opening to No. 7 seam, 2½ feet

thick. Fan ventilation, pick mining, mule haulage, single entry system. Ten miners and 4 day hands employed. Two visits made, July 28th and December 21st, and conditions approved.

Average.

Located at Washingtonville. Operated by John D. Smith, of same place, who is also manager. Slope opening to No. 4 seam, 2½ feet thick. Fan ventilation, rope and mule haulage, pick mining. Four miners and 2 day hands employed. On my visit September 10th, mine was in poor condition; air deficient. Orders were given to repair stoppings and conduct air to better advantage. Management expects to make new opening and cut off part of old works.

Oak Hill Clay.

Located at Washingtonville, O., on the Y. & O. R. R. Operated by the Columbia Fire Clay Co., Cleveland, Ohio. I. N. Russell, Salem, O., manager. Slope opening, 225 feet long to No. 3 seam of clay, 6 feet thick. Furnace ventilation, mule and rope haulage; employs 5 miners and 6 day hands. Was visited September 10th, when 3 boxes each containing 50 or 60 sticks of dynamite were found in the mine. They were ordered taken out immediately, and a safer method of handling explosives adopted.

Negley Clay.

Located at Negley, O., on P., L. & W. R. R. Operated by the Negley Clay Co., Negley, O. F. I. Powers, superintendent; James W. Suthren, mine boss both of Negley, O. Drift opening to No. 3 seam of clay, 8 feet thick. Nine miners and 1 day hand employed. Visited October 15th and found mine in fair condition, except air was deficient. A furnace was ordered built in 30 days. Shaft was already down and ventilation natural.

Card & Prosser Clay.

Located at Lisbon on the Erie R. R. Operated by Card & Prosser Coal Co., Cleveland, O. Shaft opening to No. 3 seam of clay, 6 feet thick. Exhaust steam ventilation, mule haulage. Seven miners and 2 day hands employed. Visited October 16th and condition approved.

COSHOCTON COUNTY.

Franklin No. 1.

Operated by the Columbus Coal & Mining Co., Coshocton, O. R. N. Barnes, superintendent; Grant Holdsworth, mine boss, both of Coshocton, Ohio. Drift opening to No. 6 seam, 4 feet thick, furnace ventilation, mule haulage; 17 miners and 6 day hands employed. Two visits made, June 17th and September 15th. On last visit mine was in fair condition. Only pillars are being drawn, except one entry is being driven to prove territory.

Franklin No. 2.

Operated by same company as No. 1 and managed by same parties. Drift opening to No. 6 seam. Located on Pan Handle R. R., near Franklin Station.

Coal $3\frac{1}{2}$ feet thick. Hand pick mining, mule haulage, furnace ventilation; 39 miners and 10 day hands are employed. Two visits made, June 17th and September 15th. Mine was found in fair condition, except in 4 and 5 east single entries, where air was found to be weak. A new air shaft had just been completed, but was not yet cleaned up. Orders were given to mine boss and mine committee to take men out the next morning if air did not measure up.

Barnes, or Best No. 1.

Owned and operated by the Barnes Coal and Mining Co., Coshocton, Ohio. R. N. Barnes, Coshocton, O., superintendent; John Ford, Coshocton, R. F. D No. 5, mine boss. Drift, located on W. & L. E. R. R., near Conesville, O. Fan ventilation, electric machine mining and mule haulage. No. 6 seam, $4\frac{1}{2}$ feet thick; 59 miners and 15 day hands employed. Two visits made, June 18th and September 16th. On our first visit air was found deficient in places, and doors and stoppings were ordered repaired, and a switch to control the power which is supplied from No. 2. On second visit mine was found much improved and in good condition.

Barnes No. 2.

Operated by the Barnes Coal Co., Coshocton, Ohio. C. C. Hudson, Coshocton, O., manager. Drift opening to No. 6 seam, 4 feet thick. Located on W. & L. E. R. R., near Conesville. Fan ventilation, electric machine mining and haulage. Two visits made, June 18th and September 17th. On former visit we were accompanied by Inspector Turner and found mine in fair condition. On our second visit mine was not in good condition. Air was found deficient in north face and 1 and 2 south face entries. Orders were given to repair timbers in mouth of mine and to haul no coal out of 3 and 4 west entries until stone was taken down or made safe, and that air in north face and 1 and 2 south face be fixed. Fifty miners and 18 day hands employed.

Conesville No. 1.

Owned and operated by David Davis, Conesville, O. J. G. Davis, Conesville, O., superintendent; J. W. Larr, mine boss. Drift opening to No. 6 seam. Rope haulage, furnace ventilation; 17 miners and 1 day hand employed.

Conesville No. 2.

Owned and operated by David Davis, Conesville, O. J. G. Davis, superintendent; R. Holdsworth, mine boss. Drift opening to No. 6 seam, 3 feet 10 inches thick. Located on P., C., C. & St. L. R. R. Furnace ventilation, rope and mule haulage. Twenty-eight miners and 1 day hand employed. As second opening was not according to law, company was ordered to comply. Visited June 17th.

Conesville No. 4.

Owned and operated by David Davis, Conesville, Ohio. J. G. Davis, superintendent; J. F. Murphy, Conesville, O., mine boss. Slope opening, fan ventilation, compressed air machine mining, rope and mule haulage. Coal 3 feet 10 inches thick. This mine suspended operations April 1st and was still idle on this visit, June 17th. Management expects to begin operating July 1st. We suggested the starting of the fan June 22nd, so as to restore ventilation before men be allowed to enter mine.

Wade No. 2.

Located on W. & L. E. R. R., near Coshocton, Ohio. Owned and operated by the Wade Coal Co., Cleveland, O. Jas. Perkins, Coshocton, O., manager. Pick mining, furnace ventilation; 14 miners and 4 day hands employed. Two visits made, June 16th and September 24th; condition approved.

Wade No. 3.

Located near No. 2 and operated and managed by same parties as No. 2. Furnace ventilation, pick mining and mule haulage. Nine miners and 4 day hands are employed. Entry pillars are being drawn. Only 5 men in rooms. Mine will soon be worked out and abandoned. Two visits were made, June 16th and September 24th. Condition approved.

Oden Valley No. 2.

Operated by the Oden Valley Coal Co., Cleveland, O. G. W. Cassingham, Coshocton, O., superintendent; James Ford, mine boss. Located on branch of Pan Handle R. R., two miles from Conesville. Drift opening to No. 6 seam, 3 feet 10 inches thick, furnace ventilation, mule haulage, pick mining; 6 miners and 1 day hand employed. This mine has had a squeeze and the management is driving around it, and is of the opinion that they are in a fair way to succeed. Visited September 14th.

Oden Valley No. 3.

Operated by same company as No. 2 and under the same management, and located near No. 2. Is a drift opening to No. 6 seam, 3 feet 4 inches thick. Furnace ventilation, mule haulage, pick mining. Forty-five miners and 24 day hands employed. On this visit, September 14th, was called to investigate the fatal accident of James Wesley Moor by a fall of draw slate about four inches thick, which occurred on September 4th, causing his death September 11th. Mine was not up to the standard. Doors were in poor condition, making the circulation of air poor. The management, when asked to repair doors, said it was almost impossible to keep doors on rooms on account of solid shooting, which is the system of mining coal at this mine.

Morgan Run No. 3.

Operated by the Morgan Run Coal Co., Cleveland, O. L. B. Piper, superintendent; Robert McCormick, mine boss, both of Coshocton, Ohio. Drift, located about 4 miles from Coshocton on the Pan Handle and W. & L. E. R. R. This mine is working the No. 6 seam of coal, 3½ feet thick. Furnace ventilation, motor and mule haulage. Ninety-five miners and 31 day hands employed. Visited June 16th and September 23rd and found in good condition.

Cassingham No. 2.

Operated by the Coshocton Coal Co., Cleveland, O. Charles Cassingham, Cleveland, O., superintendent; Wm. Powers, Coshocton, O., mine foreman. Drift opening to No. 6 seam, 3 feet 8 inches thick. Located west of Coshocton on the W. & L. E. R. R. Fan ventilation, electric mining and haulage. Seventy-two miners and 35 day hands employed. Visited September 22nd. Air in 5 and 6 off main face and in 5 and 6 east entries was found deficient. Doors

and stopping in bad repair and trolley wires in poor condition. Orders were given to remedy all these defects as soon as possible, and management promised to give them immediate attention.

Hudson.

Operated by Hudson Bros., Coshocton, Ohio. Dan Hudson, superintendent; Ed. Hudson, mine boss, both of Coshocton, O. Drift to No. 6 seam, 3 feet thick. Furnace ventilation, mule haulage. Four miners and 1 day hand employed. Visited September 24th. Timbers were ordered renewed in mouth of mine.

Nichols.

Operated by A. C. Nichols, Coshocton, O. A. C. Nichols, superintendent; Ed. Day, mine boss. Situated on the W. & L. E. R. R. Drift opening to No. 6 seam. Furnace ventilation, pick mining. Six miners and 2 day hands employed. Robbing of pillars is the only work being done, and from present indications this mine will soon be finished. Visited September 17th.

Forest Hill.

Operated by Laird Bros., Coshocton, R. F. D. No. 2. James Laird, superintendent and mine boss. Situated on W. & L. E. R. R. Drift opening to No. 6 seam, 3 feet thick. Furnace ventilation, mule haulage, pick mining. Thirteen miners and 2 day hands employed. Visited September 22nd.

Lear.

Operated by Henry Lear, Coshocton, Ohio, who is also manager. Drift to No. 6 seam, 3 feet 3 inches thick. Furnace ventilation, mule haulage, pick mining. This is a domestic mine which usually employs 8 or 10 men, but on account of poor trade only 2 miners and 1 day hand were employed. Visited September 23rd and found in good condition.

Warwick No. 4.

This is a new drift opening into No. 6 seam and is operated by the Warwick Coal Co., of Cleveland, Ohio. William Powers, Coshocton, is manager. Situated on the W. & L. E. R. R., about 4 miles from Coshocton, Ohio. Twelve miners were employed on this visit, October 28th. This mine will be equipped with all modern machinery and will be one of the finest in the state.

Warwick No. 5.

Operated by the same company and under the same management as No. 4. Drift opening to No. 6 seam, opposite No. 4 opening, but a sister mine, the product of both No. 4 and No. 5 going to the same double tipple. This mine will be equipped same as No. 4. Coal 4 feet thick. Twelve miners employed.

TUSCARAWAS COUNTY.

Mullins No. 1.

Operated by the Mullins Coal Co., Cleveland, Ohio. Wm. Sorg, New Philadelphia, Ohio, superintendent; Robert Sewell, same place, mine boss. Drift located on C. & P. R. R., six miles northeast of New Philadelphia. Fan ventilation, electric haulage, both electric and compressed air machine mining. One hundred and nine miners, 28 day hands inside and 21 outside employed.

Four visits made, July 14th, September 28th, October 30th and November 9th; on September 28th to investigate the fatal accident to James B. Kennedy, who was instantly killed by a fall of rock. On October 30th to investigate a serious accident to Carmiel Forever, who was said to have his back broken by a fall of rock, and on November 9th to test scales, which were found correct. Mine on each visit was found in fair condition, except wires were ordered placed as provided by law, and a second opening was suggested made at head of workings, a matter the management is now trying to effect. A new opening is being made near this mine, the product of which will go to the same tippie.

Mullins No. 2.

Operated by James Mullins Coal Co., Cleveland, Ohio. Wm. Sorg, New Philadelphia, superintendent; Geo. B Dean, mine boss. Drift located on C. & P. R. R., about 4 miles from New Philadelphia. Fan ventilation, electric haulage, compressed air machine mining. Seventy-one miners and 31 day hands employed. Mine was in fair condition when visited August 4th. Mine suspended operation soon after this visit and just began operating again about December 1.

Goshen Hill.

Operated by the Goshen Hill Coal Co., Cleveland, Ohio. Frank McIntosh, superintendent; Geo. McIntosh, mine boss, both of New Philadelphia, Ohio. Drift opening to No. 6 seam, $4\frac{1}{2}$ feet thick, located on C. & P. R. R., at Roswell, Ohio. Furnace ventilation, cable haulage, pick mining. Fifty miners and 14 day hands employed. Two visits made, July 16th and November 20th. Mine on each visit was in poor condition, owing to air having to pass through so many old works, giving off black damp. On my last visit I found quite a number of pillars being robbed. Orders were given to hang door where flag boy is employed and to force holing in first left entry.

Goshen Central.

Operated by the Goshen Central Coal Co., Massillon, Ohio. W. K. Moor, New Philadelphia, Ohio, superintendent and mine boss. Drift opening located 3 miles from New Philadelphia, on C. & P. R. R. Fan ventilation, electric and mule haulage, pick and machine mining. Coal $3\frac{1}{2}$ to 5 feet thick. Eighty-one miners and 24 day hands are employed. Four visits made. July 17th, when air was found deficient owing to the stopping of the main fan, which was operated by power taken from the main wires, and the small fan was not operating owing to the motor being burnt out. Company was ordered to put on either an automatic starter or a direct wire, the latter being preferred. Management put on a direct wire and a new 25 H. P. motor to fan, which seems to be giving good satisfaction. Other visits made August 20th, Sep-

tember 18th and December 1st. On our last visit mine was in fair condition, except air in second right, where rooms were being rapidly finished going to the crop. Men were also shooting any time in the day. Advised a discontinuance of the shooting and orders were given the management to improve the air and to arrange wires and manholes as provided by law.

Beaver Dam No. 1.

Operated by the Beaver Dam Coal Co., Cleveland, Ohio. Thos. G. Brooks, New Philadelphia, Ohio, superintendent; John Norton, Roswell, mine boss. Shaft 80 feet deep to No. 6 seam. Located on C. & P. R. R. near Roswell, Ohio. Fan ventilation, electric haulage and pick mining. Eighty-five miners and 23 day hands employed. Two visits made. August 21st, I found management had just received a new Jeffrey fan, which was erected immediately. Air on this visit was in poor condition. October 29th I found mine much improved. New fan in operation, which seemed to be giving good results. I also found a new mine boss installed, a Mr. Evan Phillips. Under the new management the mine has been much improved, which is very commendable. Mr. Brooks, the superintendent, having just taken hold of mine this summer.

Beaver Dam No. 2.

Operated by the same company as No. 1. Mr. Thomas G. Brooks, New Philadelphia, Ohio, superintendent; Elmer Tederick, Midvale, Ohio, mine boss. Shaft 85 feet deep to No. 6 seam. Located on B. & O. R. R. near Midvale. Fan ventilation, electric haulage. Coal 4 feet thick. Eighty miners and 26 day hands are employed. Three visits made, July 21st, August 5th and November 19th. Cesere Magnani was severely injured in this mine early in August, while trying to tamp his powder back, which had lodged in the hole. Mine was found in fair condition, except in 11 and 12 west, where a door was ordered hung to improve air. Wiring and manholes were also ordered as provided by law.

East Goshen No. 2.

Operated by the East Goshen Coal Co., Cleveland, Ohio. Wm. Empfield, New Philadelphia, Ohio, superintendent; John L. Sullivan, Roswell, mine boss. Slope, 125 feet long to No. 6 seam. Located on C. & P. R. R., near Roswell, Ohio. Fan ventilation, electric haulage, pick and machine mining. Coal 4 feet thick. Ninety-eight miners and 32 day hands employed. Two visits made. August 7th some trouble was found to exist owing to posts not being sent in, or sent to wrong places. On November 17th investigated the fatal accident to Ardibino Vincenzo, who was killed by a shot blowing through the pillar. It is to be deplored that so many miners are killed from this one source when it could so easily be avoided.

Goshen Shaft.

Operated by the Goshen Coal and Mining Co., Cleveland, Ohio. D. P. Loomis, superintendent; Peter Reis, mine foreman, both of New Philadelphia, Ohio. Shaft, 105 feet deep, located on C. & P. R. R., near Roswell, Ohio. Employs 81 miners and 40 day hands. Fan ventilation, compressed air machine mining, mule haulage. Two visits made. On my last visit I found engine placed and partings made and the mine undergoing many changes preparatory

to installing cable haulage. Mine was in fair condition, except in places where rooms were driven very deep. Check doors were ordered on entries to divert air to such rooms.

Houk.

Operated by the American Sheet and Tin Plate Co., Pittsburg, Pa. J. L. Houk, superintendent; Emmet Carnes, mine foreman, both of Stillwater, Ohio. Drift, situated on B. & O. R. R., near Stillwater. Fan ventilation, motor and mule haulage, pick mining. Coal 4 to 5 feet thick. Forty-two miners and 24 day hands employed. Two visits made and condition approved.

Wainwright No. 4.

Operated by the Midvale Goshen Coal Co., Cleveland, Ohio. Frank McIntosh, New Philadelphia, Ohio, superintendent; R. R. Reichman, Wainwright, mine boss. Slope, 600 feet, situated on the B. & O. R. R., at Wainwright, Ohio. Furnace ventilation, rope and mule haulage, pick mining. Forty miners and 9 day hands employed. Mine was suspended all summer. Visited November 18th and found in fair condition. On this visit I discovered that an accident had happened to Angelo Besozzi on November 11th, and caused his death on the 15th. A piece of coal fell suddenly, catching one forefinger, severing it, and crushing his arm at the elbow. He was not thought to be severely injured, but death resulted suddenly from blood poison.

Hazel No. 6.

Operated by H. E. Cole, Midvale, Ohio, who is also superintendent. C. B. Fox, mine boss, also of Midvale, Ohio. Drift to No. 6 seam. Located on B. & O. R. R., near Midvale. Furnace ventilation, pick mining, rope and mule haulage. Seventy-eight miners and 17 day hands employed. Two visits made, October 23rd and December 31st. On former visit discovered there was no second opening. Ordered same made within 10 days, which was complied with, and on second visit mine found much improved, with stairs in second opening.

Goshen No. 2.

Operated by the Goshen Valley Coal Co., Massillon, Ohio. Herman Schneider, Beidler, Ohio, superintendent; John Turnbull, same place, mine boss. Drift, to No. 6 seam. Located on B & O. R. R., near Beidler, Ohio. Fan ventilation, rope and mule haulage, pick mining. Four feet thick. Thirty-three miners and 16 day hands employed. Two visits made. A new 12-foot Brazil fan has been installed, putting air in good condition. On last visit men were idle on account of scarcity of posts. Otherwise mine was in good condition.

West Goshen.

Operated by the Cleveland and Tuscarawas Coal Co., Cleveland, Ohio. C. L. Cassingham, Cleveland, Ohio, superintendent; Emery Ankney, Joyce, Ohio, mine foreman. Drift opening to No. 6 seam. Situated on Pennsylvania R. R., near Joyce, Ohio. Fan ventilation, electric and cable haulage, pick and ma-

chine mining. Eighty-four miners and 29 day hands employed. Two visits made. Mine was found in fair condition, except wiring, which the management was adjusting on my last visit in compliance with the law.

Midvale Goshen No. 7.

Operated by the Midvale Goshen Coal Co., Cleveland, Ohio. Frank McIntosh, New Philadelphia, Ohio, superintendent; Chas. Lorenz, Wainwright, Ohio, mine boss. Drift to No. 6 seam, 4 feet thick. Furnace ventilation, cable and mule haulage, pick and machine mining. Two visits made. On first visit found no second opening. Requested same made as soon as possible. On second visit found second opening made, but not just completed. It was ordered completed and stairs put in. Mine in all other respects was in good condition. Sixty-seven miners and 17 day hands are employed.

Midvale Goshen No. 6.

Operated by the Midvale Goshen Coal Co., Cleveland, Ohio. Frank McIntosh, New Philadelphia, Ohio, superintendent; John Horger, Wainwright, Ohio, mine boss. Slope, 300 feet long. Located on B. & O. R. R., near Wainwright, Ohio. Fan ventilation, electric mining and haulage. Employs 87 miners and 25 day hands. Three visits made. July 22nd air was found in poor condition. Air course was almost closed and much dust found on roadways and wires in bad condition. Orders were given to immediately remedy these defects. July 24th, visited mine in company with Mining Commission and Chief Inspector Geo. Harrison, Inspectors Turner, Miller and Jones and officials of the company and the management of the mine. On September 29th investigated fatal accident of Frank Massillini, which occurred September 9th, causing his death September 19th. Accident was caused by fall of rock. Mine much improved over previous visits. Superintendent McIntosh took charge of his property about September 15th.

Goshen No. 3.

Operated by the Goshen Valley Coal Co., Massillon, Ohio. Herman Schneider, Beidler, Ohio, superintendent and mine boss. Drift to No. 3 seam, 4½ feet thick. Pick mining, furnace ventilation, mule haulage. Three visits made. On the two former, mine was found in poor condition and orders were given to provide new furnace stack and also new opening. On our last visit found some little improvement and men working in the new opening, which was being driven from both ends, a distance of 150 feet. This, when completed, will put the mine in good condition. However, we cannot see the utility of coal companies building furnace stacks with 2 or 2½ feet tile or iron, expecting to ventilate mines for 40 or 50 men. It cannot be done and done properly.

Veleney.

Operated by H. E. Cole, Midvale, Ohio. Located at Barnhill, Ohio, on the B. & O. R. R. C. B. Fox, Midvale, Ohio, superintendent; Anthony Wornacott, Barnhill, mine boss. This is a new mine just being developed, but striking through some of the old works of the old Brock Hill mine. Furnace ventilation, mule haulage, pick mining. Coal 1½ feet thick. Thirty-five miners and 7 day hands employed. While making the inspection Wm. Richards (a driver) was seriously injured by a fall of rock in the cut-off entry, but the

latest report was to the effect that he is improving. Two visits made. On December 29th mine was found poorly ventilated, and I ordered a new furnace stack provided, the present stack being only 2 feet in diameter, and 39 men in the mine.

Royal Goshen No. 2.

Operated by H. E. Cole, Midvale, Ohio. R. W. Rutlege, superintendent. E. C. White, mine boss, both of Midvale, Ohio. Drift opening to No. 6 seam. Located near Midvale, on the B. & O. and Pennsylvania R. R.'s. Furnace ventilation, mule haulage, pick mining. Ten miners and 2 day hands employed. Condition approved.

Royal Goshen No. 4.

Operated by H. E. Cole, Midvale, Ohio. C. B. Fox, Midvale, Ohio, superintendent; T. J. Watson, same place, mine boss. Drift to No. 6 seam, 4½ feet thick. Furnace ventilation, rope and mule haulage. Fourteen miners and 2 day hands employed. Mine was suspended all summer, installing cable haulage. A new second opening is made at head of workings through which inlet is brought, giving men pure air at face of workings. Scales tested and found correct.

Central Valley No. 2.

Operated by the Massillon-Tuscarawas Coal Co., Massillon, Ohio. C. C. Smith, Somerdale, Ohio, superintendent and mine boss. Drift opening to No. 6 seam, 3 feet 8 inches thick. Located on the W. & L. E. R. R., near New Cumberland, Ohio. Fan ventilation, cable haulage, compressed air machine mining. Two visits made. On June 5th air was found deficient in places, owing to the changing of partings to extend rope haulage. On second visit found mine much improved and in fair condition.

Indian Hill.

Operated by the Ohio Coal and Coke Co., Cleveland, Ohio. John Ronald, Uhrichsville, Ohio, superintendent and mine boss. Drift, located on Pan Handle R. R., near Uhrichsville, Ohio. Fan ventilation, motor and mule haulage, electric machine mining. Fifty-three miners and 13 day hands employed. Two visits made. On first visit mine was in poor condition. Air was impregnated with much black damp, carried through the main haulway to fan, and in several places air was deficient. On second visit air was somewhat improved, but not what it ought to be. This is probably due to the second opening being too small for the distance it has to travel before reaching the fan. Requested that attention be given the ventilation, electric wires and manholes on motor road. Management has already provided manholes on part of its motor road.

Huff Run No. 1.

Operated by the Ridgeway Burton Coal Co., Cleveland, Ohio. Alex. Lindsay, Mineral City, Ohio, manager. Drift, located on B. & O. R. R. at Mineral City, Ohio. Fan ventilation, cable haulage, pick mining. No. 5 seam, 3½ feet thick. Forty miners and 16 day hands employed. Two visits made. On first air was found to be deficient and orders given to improve circulation. On

second visit ventilation and general condition found improved. Both pairs of scales tested and found correct. No. 1 scales were found to be slow on draft, but correct.

Federal Clay (Coal).

Operated by the Federal Clay Product Co., Mineral City, Ohio. E. L. Jones, superintendent; Chas. Williams, mine boss, both of Mineral City, Ohio. Drift to No. 5 seam, 3 feet thick. Furnace ventilation, mule haulage, pick mining. Seven miners and 1 day hand employed. Two visits made. On first visit mine was poorly ventilated. On second visit mine was found much improved and air in good circulation. Coal is used to operate Factory No. 1 of the Federal Product Co.

South Side.

Owned and operated by C. E. Holden, Mineral City, Ohio. Located on B. & O. R. R. Drift to No. 5 seam, 3 feet 8 inches thick. Furnace ventilation, mule haulage, pick mining. Two visits made, July 1st and November 11th. On first visit Melvin Miller was in charge of mine, with 4 miners and 4 day hands. Water was filling up the workings and men were ordered to square up places and were started to work near the furnace. On second visit Wm. G. Smith was in charge, 5 miners and 4 day hands. Water was being pumped out of old works, which are now in operation and mine in fair condition.

Massillon Peacock.

Operated by the Peacock Coal and Mining Co., Mineral City, Ohio. John Punccheon, Mineral City, manager. Furnace ventilation, rope and mule haulage, pick mining. Employs 36 miners and 12 day hands. Two visits made, July 2nd and November 12th. Mine on each visit was found in good condition. On last visit pillars were being robbed on old west side, which will soon be abandoned.

Acme No. 2.

Operated by G. J. Markley, Mineral City, Ohio. E. L. Jones, Mineral City, manager. Drift, No. 5 seam, 3 feet thick. Located on B. & O. R. R., one mile east of Mineral City, Ohio. Furnace ventilation, mule haulage. Eighteen miners and 6 day hands employed. Two visits made and mine found in fair condition.

Somerdale No. 1.

Operated by the Somerdale Coal Co., Cleveland, Ohio. H. Sheldon, Cleveland, Ohio, Superintendent; James Hardrige, Somerdale, Ohio, mine boss. Drift, No. 6 seam, 3 feet 8 inches thick. Located on W. & L. E. R. R. Fifty miners and 12 day hands employed. Rope and mule haulage. Furnace ventilation and pick mining. Two visits made. On first visit one boy was found under age and ordered out of mine. On both visits mine was found poorly ventilated. Orders were given to hang doors and improve circulation of air. The furnace at this mine is located away back in the old works and on this account is doubtless neglected at times. I suggested sinking shaft at head of workings, but it seems at present location of workings the objection is the depth a shaft would be, on account of the heavy hill over the coal.

Royal Goshen No. 5.

Operated by H. E. Cole, Midvale, Ohio. C. B. Fox, Midvale, Ohio, superintendent. J. A. Womacott, Barnhill, mine boss. Furnace ventilation, mule haul-

age and pick mining. Thirty miners and eleven day hands employed. Drift, No 6 seam. Visited August 28th and found in poor condition and almost exhausted. Second visit, December 11th, mine was abandoned except timber and iron, which was being taken out.

Novelty.

Operated by the Novelty Brick and Coal Co., Newcomerstown, Ohio. R. L. Shumaker, superintendent; Geo. Adams, mine foreman, both of Newcomerstown, Ohio. Located on the Pennsylvania R. R. Drift, No. 6 seam, 2 feet 9 inches thick. Fan ventilation, mule haulage. Eighteen miners and 5 day hands employed. Visited September 25th and condition approved, except a new stairs which was ordered placed in second opening.

Royal No. 3.

Operated by John S. Scott, Jr., Midvale, Ohio. Situated at the Royal Sewer Pipe Works, Midvale. Drift opening, No. 6 seam, 4½ feet thick. Natural ventilation, mule haulage. Five miners and 2 day hands employed. Visited December 11th, when several kegs of powder were found stored in shanty near mouth of mine in which a stove was kept fired. This was immediately ordered out. Mr. Scott promised to do this at once.

Diamond Coal.

Operated by the American Sewer Pipe Co., Uhrichsville, Ohio. Geo. Ross, superintendent; Alex. Walters, mine boss, both of Uhrichsville, Ohio. Drift, No. 6 seam, 4 feet thick. Located at the Diamond Sewer Pipe Plant, Uhrichsville, Ohio. Furnace ventilation, mule haulage. Eleven miners and 2 day hands employed. Two visits made, August 25th and December 10th, and condition approved.

Buckeye Coal.

Operated by the Buckeye Fire Clay Co., Uhrichsville, Ohio. Located west of Uhrichsville, on the Pan Handle R. R. Joseph Lobe, Uhrichsville, superintendent; Harry K. Pfister, Tuscarawas, Ohio, mine boss. Drift opening, furnace ventilation, mule haulage, pick mining, coal 4 feet thick. Eleven miners and 2 day hands employed.

Advance Coal.

Operated by the Advance Fire Clay Co., Uhrichsville, Ohio. Geo. Ross, superintendent; Joseph Shilon, mine boss, both of Uhrichsville, Ohio. Drift, No. 6 seam. Furnace ventilation, pick mining, mule haulage. Employs 4 miners and 1 day hand. Visited August 25th and found in fair condition.

Pleasant Hill.

Operated by Breyer Bros., New Philadelphia, Ohio. Frank Breyer, manager. Drift, No. 6 seam. Located about 3 miles northwest of New Philadelphia. Pick mining, mule haulage, fire basket ventilation. Ten miners and 2 day hands employed. Mine in good condition, except last room on cut-off, where black damp was found and men taken out.

Morey Ridge.

Operated and managed by C. J. Nungesser, Baidler, Ohio. Alex. Winkler, same place, mine boss. Drift, located near Baidler, Ohio, on B. & O. R. R. Furnace ventilation, mule haulage. Sixteen miners and 2 day hands employed. Mine in fair condition when visited, July 23rd.

Brock Hill No. 3.

Operated by B. F. Hawkins, Barnhill, Ohio. B. F. Hawkins, manager. Drift opening. No 6 seam, 5 feet thick. Natural ventilation, mule haulage, pick mining. Twelve miners and 2 day hands employed. Visited December 29th and found in poor condition. Orders were given to hang doors and effect a better circulation of air.

Robinson Graves (Coal).

Operated by the Robinson Graves Clay Co., Uhrichsville, Ohio. Wm. Tanzie, Denison, Ohio, manager. Drift, located near factory on B. & O. R. R. Furnace ventilation, pick mining and mule haulage. Employs 12 miners and 3 day hands. Visited August 17th and December 30th and found in good condition.

Stettler.

Owned and operated by B. Gibson & Sons, New Philadelphia, Ohio. This is a domestic mine near New Philadelphia, Ohio. Drift, No. 6 seam, 3 feet thick and of good quality. Pick mining, mule haulage, natural ventilation. There is a furnace and furnace shaft always ready for use, but scarcely ever needed. Four miners are employed. Visited October 27th and condition approved.

Burgis No. 1.

Operated by the Tuscarawas Coal Co., Canal Dover, Ohio. Fred Egler, Canal Dover, Manager. Drift, No. 6 seam. Located about 2½ miles southeast of Canal Dover. Coal 4 feet thick. Furnace ventilation, mule haulage, pick mining. Seven miners and 2 day hands employed. Visited November 24th and condition approved.

Burgis No. 2.

Owned and operated by James and Addison Burgis. Located near No. 1. A new drift opening, No. 6 seam, 4 feet thick. Furnace ventilation. Only 3 men at present employed.

Spece Mine.

Operated and managed by Henry Spece, about 2 miles from Uhrichsville, Ohio. I was requested to visit this mine, which I did December 10th, and ordered air shaft sunk and new air course driven as soon as possible. Five miners and one day hand employed.

Schindler.

Operated by H. A. Schindler, Tuscarawas, Ohio. Located near the Indian Hill Mine. Drift opening, No. 6 seam, 4 feet thick. Natural ventilation, mule haulage, pick mining. Six miners employed. Visited twice and condition approved.

Wardell.

Owned by Jeremiah Wardell and located about two miles from Uhrichsville, Ohio. A domestic mine, to which I was called December 1st. Only 2 miners employed, one of whom (Joseph Keith, 37 years of age) was found dead in his place between 5 and 6 A. M., December 1st. On my investigation no evidence of accident or foul air could be found.

Twin City.

Located near Dennison, Ohio. Visited and found suspended about all year, and is still suspended.

CLAY MINES.**South Side Clay.**

Owned and operated by C. E. Holden, Mineral City, Ohio. Located on B. & O. R. R. Furnace ventilation, solid blasting. Five miners and 2 day hands employed. The clay lays beneath No. 5 seam of coal; is composed of shale, plastic and flint of fine quality. Much water was found in the roadway. Two visits made. On second visit I found a new slope from coal to clay, which is hauled out of same opening as south side coal and is under the same management.

Federal Clay.

Owned and operated by the Federal Clay Product Co., Mineral City, Ohio. E. L. Jones, superintendent; Chas Williams, mine boss, both of Mineral City, Ohio. Thirteen miners and 3 day hands employed. Mine visited November 13th and found in fair condition, except it is very dangerous from great height and over-hanging sides. We suggested that the flint clay be made the roof while driving places, then as soon as cut-offs are made this could be brought back, avoiding the danger incident to working or passing through it.

Diamond Clay.

Operated by American Sewer Pipe Co., Uhrichsville, Ohio. Geo. Ross, superintendent; Alex. Walters, mine boss, both of Uhrichsville, Ohio. Seven miners and 1 day hand employed. Furnace ventilation and mule haulage. Visited December 10th and conditions were approved.

Buckeye Clay.

Operated by the Buckeye Fire Clay Co., Uhrichsville, Ohio. Joseph Lobe, same place, superintendent; Henry Adamson, mine boss. Located one mile west of Uhrichsville, on Pan Handle R. R. Slope opening, furnace ventilation, rope and mule haulage. Nine miners and one day hand employed. Visited August 26th and condition approved.

Advance Clay.

Operated by the Advance Fire Clay Co., Uhrichsville, Ohio. Geo. Ross, superintendent; Geo. Ross, Jr., mine boss, both of Uhrichsville, Ohio. Drift lo-

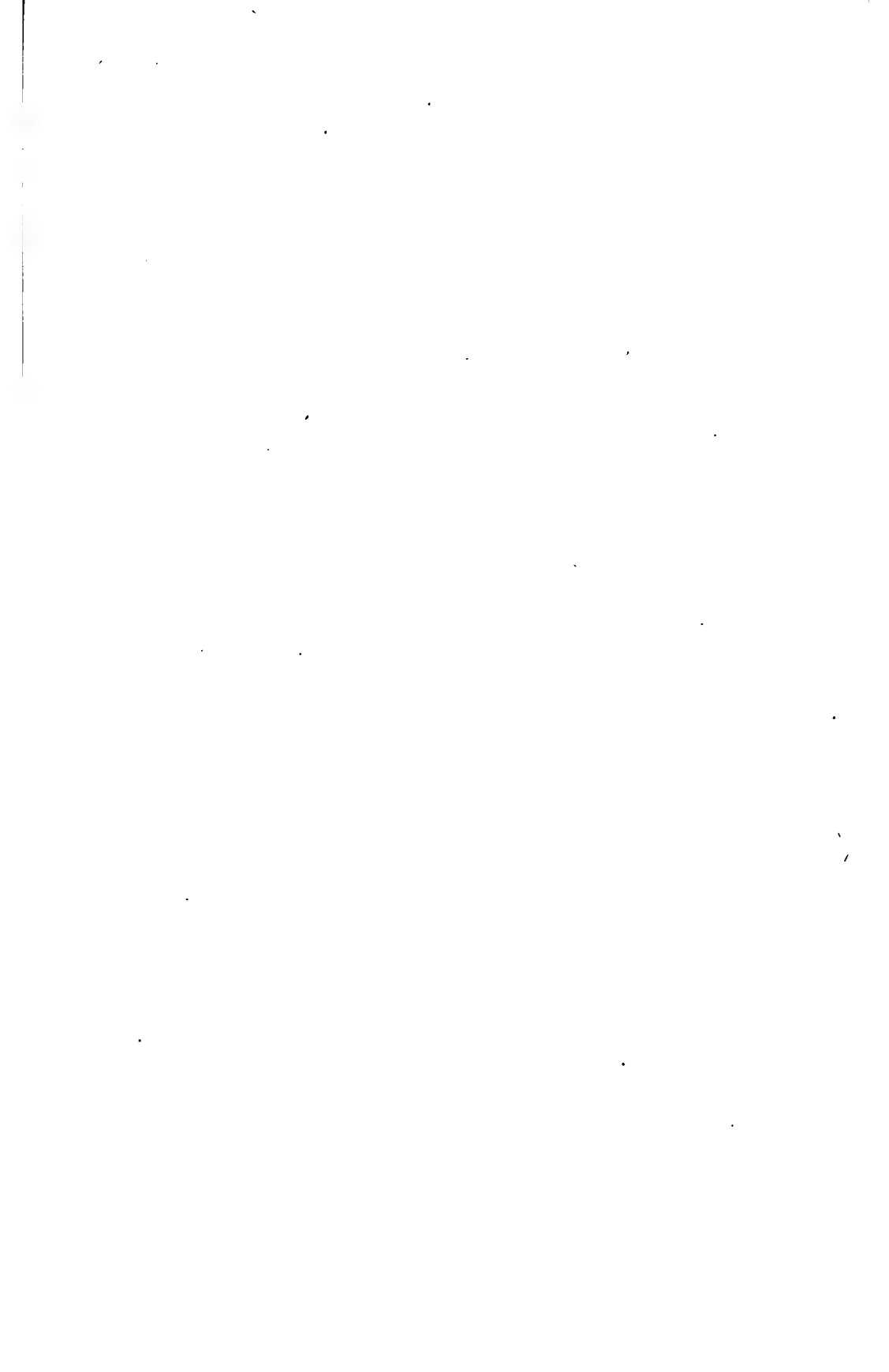
cated near Uhrichsville. Natural ventilation. Four miners and 1 day hand employed. Visited August 25. Timbers in places were found in bad condition and ordered renewed. Otherwise mine was in good condition.

Royal Clay.

Located at the Royal Clay Works, Midvale, Ohio. Operated by the Robinson Clay Product Co., Akron, Ohio. Eugene Smith, New Philadelphia, superintendent; Lewis Just, Barnhill, Ohio, mine boss. Shaft, 80 feet deep, steam hoist, fan ventilation, mule haulage. Electric drills are used. Twenty miners and 12 day hands are employed. Two visits made and mine found in good condition. Safety catches were tested and worked successfully. About 5 kegs of powder are used each day and shots prepared and fired by regular shot firers.

Robinson Graves Clay.

Operated by Robinson Graves Co., Uhrichsville, O. Wm. Tanzie, Denison, Ohio, manager. Drift, furnace ventilation, solid blasting, mule haulage. Two visits made, August 17th and December 30th. Mine in each case found in poor condition. Orders were given to put air in better condition. Management is preparing to put in cable haulage. Twelve men are employed.



SEVENTH DISTRICT

W. H. MILLER.

COMPOSED OF THE COUNTIES OF HOLMES, MAHONING, MEDINA,
OTTAWA, PORTAGE, STARK, SUMMIT AND WAYNE.

Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio:

Dear Sir:—In compliance with the custom of the Mining Department, I herewith submit my annual report of the Seventh Mining District of Ohio for the year commencing January 1st, 1908, and ending December 31, 1908, inclusive. It comprises the counties of Holmes, Mahoning, Medina, Ottawa, Portage, Stark, Summit and Wayne.

This has been a very dull season in the mining industry throughout my district.

Thirty-one permanent improvements are recorded for the year, consisting of 4 furnaces, 6 fans, 13 air shafts, 3 sets of safety catches, 3 stairways and 2 speaking tubes. Twelve sets of scales were tested, out of which 11 were correct and one incorrect.

Two fatal accidents occurred during the time covered by this report, which are attributed to Stark county. On October 17th, John Burk, who was engaged as a miner in the Fox No. 12 Mine, while removing pillars, met his death by a fall of stone. On November 16th Eugene Petterman was injured by a fall of slate while removing pillars in the Wise Mine, and died on November 19th at the hospital.

Nine new mines were opened, 9 remained suspended and 7 abandoned during the year.

At the request of Chief Inspector of Mines Geo. Harrison I made 3 visits out of my district, by counties as follows: Columbiana 6, and Tuscarawas 2.

On May 8th I received a telegram from Chief Inspector George Harrison, to meet him and his deputy inspectors, Turner, Jones and Morrison, at Massillon, Ohio, on May 12th, to go to the Pocock No. 3 Mine and make an investigation of part of the mine that was being driven toward New Greenville No. 3, which was abandoned and filling with water, the miners having refused to work until an investigation was made.

We visited the mine on May 12th, in company with the mine committee, Mr. Peter Gorman, district president, and Mr. Wm. Kutz, mine superintendent, and proceeded to the place of the investigation, a full description of which will be found on page 363 of this report.

In conclusion, I desire to say that the entire year of my official duties has been of a pleasant character, and I wish to extend to you my sincere thanks for your advice and assistance in the discharge of my duties throughout the year.

Respectfully submitted,

W. H. MILLER, Massillon, O., R. F. D. No 1,
December 31, 1908. Inspector Seventh District.

MEDINA COUNTY.

James No. 4.

Located near Wadsworth, Ohio. Operated by James Coal Co., Wadsworth, Ohio. Thomas James, Wadsworth, Ohio, has full charge. Slope opening, 180 feet, penetrating the No. 1 seam of coal, which varies in thickness from 4 to 5 feet. Exhaust steam is used as a ventilating medium. Employs 11 miners and 3 day men. Four visits made. February 24th and June 25th, conditions fair. September 22nd, ventilation deficient. December 16th, mine in good condition for pillar work.

Hambelton.

Situated near Wadsworth, Ohio. Operated by the Hambelton Coal Co., Wadsworth, Ohio. Geo. Hambelton, Wadsworth, Ohio, has full charge. Drift, No. 1 seam, 4 feet thick. Furnace ventilation. Employs 6 miners and 2 day men. Four visits made, February 24th, June 24th, September 22nd and December 15th. On each visit conditions were good.

Long Shaft.

Situated near Wadsworth. Owned and operated by the Keller Coal Co., Wadsworth, Ohio. Peter Keller, Wadsworth, has full charge. Shaft, 64 feet deep. No. 1 seam of coal, about 4 feet thick. Ventilated by exhaust steam, and employs from 8 to 12 miners and 2 day men. Four inspections were made, February 24th, June 25th, September 23rd, ventilation deficient. Ordered it improved. December 16th, found ventilation good.

Klondyke.

Located near Wadsworth, on the Erie R. R. Operated by the Hutchinson Coal Co., Wadsworth, Ohio. John Hutchinson, superintendent; John McLaney, mine foreman, both of Wadsworth, Ohio. Slope, 150 feet in length, entering the No. 1 seam of coal, which is from 3 to 3½ feet thick. Has furnace ventilation. Six to 9 miners and 2 day men. Three visits made, February 25th, June 25th and December 16th. On each occasion condition fair.

Pleasant Valley.

Located near Wadsworth, Ohio. Operated by Gertenslager & Son, Wadsworth, Ohio. V. Gertenslager, Wadsworth, Ohio, has full charge. Slope opening 196 feet in length into the No. 1 seam of coal, which is 4 feet thick at this point. Ventilated by exhaust steam. Ten miners and 3 day men employed. Four visits made. February 25th and June 24th, found them sinking their second opening. September 23rd and December 17th, second opening completed and stairway built.

Reichard.

Situated near Wadsworth. Operated by F. T. Reichard, Wadsworth, Ohio, who has full charge. Shaft opening, 40 feet deep. No. 1 seam of coal, 3½ feet thick. Ventilated by exhaust steam. Employs 8 miners and 2 day men. Four visits made. February 24th, ventilation deficient; ordered a break-through cut. June 24th, former order complied with. September 22nd, venti-

lation deficient in Nos. 2 and 3 rooms, caused by the air courses being blocked with slate; ordered it cleaned out. December 15th, former orders complied with. Conditions fair.

Birkbeck.

Located near Wadsworth, Ohio. Operated by the Birkbeck Coal Co., Wadsworth, Ohio. J. P. Birkbeck, Wadsworth, Ohio, has full charge. Slope opening, 210 feet, No. 1 seam, 4 feet thick. Ventilated by exhaust steam. Employs 8 miners and 2 day men. New mine, and when visited on December 15th found in first-class condition.

MAHONING COUNTY.

Fairview.

Located near Washingtonville, on the Erie R. R. Operated by the Ohio Coal and Clay Co., Cleveland, Ohio. Chas. Abblett, Leetonia, Ohio, has full charge. Slope opening, No. 3 seam, from 3 to 3½ feet thick. Fan ventilation, worked on the single entry system. Forty-seven miners and 15 day men employed. Two visits made. On or about August 14th the miners quit work, the ventilation being deficient. I received a telegram from Chief Inspector Harrison to visit the mine, which I did on August 17th. I found the fan at the mouth of the slope inadequate to furnish sufficient ventilation. The company in the meantime proceeded to install a buster fan near the face of the workings, which improved the ventilation. October 14th, visited and found the mine in good condition. Ordered a signal light carried on the haulage trip.

Beech Ridge.

Located near Salem, Ohio. Operated by the Reese Bros. Coal Co., Salem, Ohio. Thomas Reese, Salem, has full charge. Drift, No. 3 seam, 2½ feet thick. Natural ventilation. Nine miners and 2 day men employed. October 15th, found the ventilation deficient. A new furnace is being built, which, when completed, will improve conditions.

Greenamyre.

Located one mile east of Salem, Ohio. Operated by Reese & Chapel Coal Co., Salem, Ohio, R. R. No. 6. Fred Reese, Salem, Ohio, has full charge. Shaft opening, 107 feet, No. 3 seam, 3 feet thick. Natural ventilation. Employs 8 miners and 2 day men. October 15th, found the second opening completed which Mr. Morrison had ordered. Ventilation good.

Allison.

Located near Salem. Operated by Callahan & Allison Coal Co., Salem, Ohio. John Allison, Salem, Ohio, has full charge. Slope opening, No. 3 seam, 3 feet thick. Ventilated by a fan. Employs 8 miners and 2 day men. October 15th, mine in good condition.

Five Points.

Situated near North Lima. Operated by McDonald Bros., North Lima, Ohio. J. A. McDonald, North Lima, has full charge. Shaft opening, 70 feet, No. 3 A

seam, 3 feet thick. Ventilated by exhaust steam. Nine miners and 3 day men employed. October 13th, mine found in fair condition.

North Lima.

Located near North Lima, on the Y. & S. R. R. Operated by the Youngstown & Southern Ry Co., Youngstown, Ohio. E. G. Biddison, Youngstown, Ohio, has full charge. Shaft opening, 70 feet, No. 3 A seam, 28 inches thick. Ventilated by fan. Twelve miners and 6 day men employed. Two visits made. May 22nd, in company with Mr. Morrison. Long Wall system of mining adopted, equipped with a Long Wall machine, but it had broken down and was not seen in operation. October 13th, found 12 miners engaged in mining coal and clay. Several kilns have been built here. It is the intention of the company to manufacture terra cotta at this plant.

Lowellville.

Located at Lowellville, on the Erie R. R. Operated by Lowellville Coal Mining Co., Youngstown Ohio. Robert Fulton, Youngstown, Ohio, has full charge. Shaft, 75 feet, No. 1 seam of coal, which varies from 2 to 4 feet thick. Ventilated by fan. Worked on the single entry system. Thirty miners and 8 day men employed. Two visits made. May 22nd, visited in company with District Inspector Morrison, and found the Morgan-Gardner mining machine had been installed. Mr. Morrison notified Mr. Fulton, who is in charge, that shields must be put on mining machines. October 12th, part of Mr. Morrison's orders had been complied with. On my visit the machines were not in use, the mine being very hilly. These large machines could not be used, and lighter ones had been ordered by the company. This mine is in first-class condition.

McKinley.

Located near Beloit. Remained suspended through the year.

OTTAWA COUNTY.

American No. 1.

Located near Gypsum, Ohio., on the L. S. & M. S. R. R. Operated by the American Gypsum Co., Port Clinton, Ohio. Arthur Chase, Port Clinton, has full charge. Shaft opening, 42 feet deep into the Gypsum seam, which is from 5 to 8 feet thick. Fan ventilation. Employs 20 drillers, 28 loaders and 18 day men. All men employed here are paid day wages. Three inspections, July 3rd, September 3rd and November 25th. On each occasion the mine was found in compliance with the law.

Consumers Nos. 1 and 2.

Remained suspended through the year.

Lea.

Situated near Gypsum, on the L. S. & M. S. R. R. Operated by the U S. Gypsum Co., Chicago, Ill. Erhardt Holin, Gypsum, Ohio, has full charge.

lation deficient in Nos. 2 and 3 rooms, caused by with slate; ordered it cleaned out. December with. Conditions fair.

Located near Wadsworth, Ohio. J. P. Birkbeck 210 feet, No. 1 seam, 4 f miners and 2 day men. in first-class condition

Located Coal and C charge. S worked o ployed. ventilat to visi of th the r whi goc

thick. Ventilated Three inspections. ventilation deficient, caused November 24th, former

Operated by the same company as the Lea and into the Gypsum seam, which is Drift opening, 18 loaders and 3 Two drillers, 18 loaders and 3 Natural ventilation. Three visits made during the year. July 2nd, September November 24th, found the mine idle. Six men in good condition. November 24th, former

No. 2.

Located near Gypsum. Operated and under the same supervision as the Drift opening into the Gypsum seam, which is 6 feet Employ 8 drillers, 30 loaders and 6 day men. Three mine in good condition. September 2nd, ventilation Ordered breakthrough cut. November 24th, former

Lea and North mines. Drift opening into the Gypsum seam, which is 6 feet Employ 8 drillers, 30 loaders and 6 day men. Three mine in good condition. September 2nd, ventilation Ordered breakthrough cut. November 24th, former

thick. Fan ventilation. Three visits made. July 2nd, mine in good condition. September 2nd, ventilation Ordered breakthrough cut. November 24th, former

deficient in No. 2 entry. Ordered breakthrough cut. November 24th, former

orders complied with.

PORTAGE COUNTY.

Hutson No. 4.

Situated on the L. E., A. & W. R. R., near Deerfield. Operated by the Hutson Coal Co., Cleveland, O. T. J. Williams, Lloyd, Ohio, superintendent; J. P. Williams, Deerfield, Ohio, mine boss. Shaft opening, 214 feet into the No. 1 or Palmyra seam of coal, which is from 3½ to 4 feet thick. Worked on the single entry system. Fan ventilation. Thirty-three pick miners, 6 cutters, 30 loaders and 38 day men employed. Three visits made. January 29th, July 17th, mine in good condition. October 28th, on my visit I found they had re-timbered the bottom of the shaft on the west side, making it very substantial.

Hutson No. 8.

Located near Lloyd, Ohio, on the L. E., A. & W. R. R. Operated by the Hutson Coal Co. T. J. Williams, Lloyd, O., superintendent; R. Lewis, Lloyd, Ohio, mine foreman. Shaft, 130 feet deep, No. 1 or Palmyra Block seam, 4 feet thick. Fan ventilation. Single entry system. Three visits made. January 28th, I found 10 men engaged in making the bottom; also found traces of gas. July 15th, second opening completed, stairway built. December 10th mine in first-class condition in every respect and gas nearly exhausted.

Mullins.

Situated on the L. E., A. & W., near Deerfield, Ohio. Operated by the South Palmyra Coal Co., Cleveland, Ohio. J. S. Davis, Deerfield, Ohio, superintendent, and Thos. Davis, Deerfield, mine foreman. Shaft opening, 225 feet deep into the No. 1 or Palmyra seam of coal, from 3 to 3½ feet thick. Fan

Worked on the single entry system. Employs 36 pick miners, 10 loaders and 30 day men. Three inspections made. January 27th, deficient in No. 3 entry N. S.; ordered brattices repaired. July 16th, complied with, mine in fair condition. December 9th, ventilation in No. 2 entry N. S. Brattice repaired and door put up.

Strong.

Situated near Atwater. Domestic mine, operated by Strong Brothers Coal Co., Atwater, Ohio, R. R. No. 14. W. A. Strong, Atwater, R. R. No. 14, has full charge. Shaft opening, 31 feet deep, No. 4 seam, 3 feet thick. Fan ventilation, and employs from 6 to 10 miners and 1 day man. Two inspections made, January 28th and December 11th. On each occasion the mine was in compliance with the mining law.

Beveridge.

Located near Atwater, Ohio. Domestic mine, operated by Wilson & Davis Co., Atwater, R. R. No. 14. Aaron Davis, Atwater, R. R. No. 14, has full charge. Shaft opening, 30 feet into No. 4 seam, 3 feet thick. Ventilated by exhaust steam. Single entry system. Employs from 5 to 8 miners and 1 day man. Two visits made, January 28th and December 11th. Mine found in fair condition.

Y. & O.

Located near Lloyd, Ohio. Domestic mine, operated by the Palmyra Coal Co., Diamond, R. R. No. 19. W. L. Carson, Diamond, R. R. No. 1, has full charge. Shaft opening, 47 feet into the No. 1 seam, 2½ to 3 feet thick. Fan ventilation. Employs 8 miners and 2 day men. Three inspections made, January 27th, July 15th and December 11th. On each occasion the mine was found in good condition for pillar work.

STARK COUNTY.

New Greenville No. 3.

Located near East Greenville, Ohio, on the W. & L. E. R. R. Operated by the M. C. M. Co., Massillon, Ohio. Wm. Baumgardner, Massillon, Ohio, superintendent; Wm. Kautz, Massillon, Ohio, mine foreman. Shaft opening, 260 feet deep, No. 1 seam, 5 feet thick. Double entry system, fan ventilation. Thirty-three miners and 14 day men employed. January 3rd, mine in good condition for pillar work. Abandoned March, 1908.

Fox No. 12.

Situated on the W. & L. E. R. R., near Navarre, Ohio. Operated by the M. C. M. Co., Massillon, Ohio. Wm. Baumgardner, Massillon, Ohio, superintendent; William Baumgardner, Jr., Massillon, Ohio, mine foreman. Shaft opening, 200 feet deep, No. 1 seam of coal, 5 feet thick. Double entry system. Fan ventilation. Employs 41 pick miners, 6 cutters, 34 loaders and 32 day men. Four visits made. January 21st, former orders complied with; mine in fair condition. August 20th, ventilation deficient in No. 4 entry S. S. Ordered a breakthrough cut and a door put up. October 5th, former orders complied

with; ventilation deficient in No. 2 room, No. 3 entry N. S.; stopped until break-through was cut. Ordered shields put on mining machines. Mr. Baumgardner said they had ordered them, and as soon as they arrived they would be put on. Ordered marker on motor trip, light preferred. October 19th, called to investigate fatal accident of John Birk, who was killed by a fall of stone, while removing a pillar.

Geise No. 13.

Located near Stanwood, Ohio, on the B. & O. R. R. Operated by the M. C. M. Co., Massillon, Ohio. Wm. Baumgardner, superintendent, Massillon, Ohio; Wm. Pollock, North Lawrence, Ohio, mine foreman. Shaft, 200 feet deep, No. 1 seam of coal, 5 feet thick. Double entry system, fan ventilation, and employs 36 miners and 15 day men. Two inspections made. February 3rd, ventilation deficient due to second opening being blocked with ice; ordered it removed immediately. October 26th, on my visit I found the mine in operation after a suspension of about 6 months. A force of day men was cleaning up and repairing. Conditions fair as far as they had gone.

No. 17.

Situated on the W. & L. E. R. R., near West Brookfield, Ohio. Operated by the M. C. M. Co., Massillon, Ohio. Wm. Baumgardner, Massillon, Ohio, superintendent; P. H. Harney, same place, mine foreman. Shaft, 225 feet deep, No. 1 seam of Massillon coal, 5 feet thick. Ventilated by fan. Worked on the double entry system. Employs 70 miners and 27 day men. Three inspections made. May 26th, ventilation deficient in No. 1 entry E. S. Ordered break-through cut and brattice put up. August 21st, former orders complied with. Ventilation deficient in Nos. 3 and 4 entries, west side. Ordered brattice repaired and door erected. November 16th, former orders complied with; conditions fair.

No. 18.

Located near Stanwood, Ohio, on the B. & O. R. R. Operated by the M. C. M. Co., Massillon, Ohio. Wm. Baumgardner, Massillon, Ohio, superintendent; John Baumgardner, same place, mine foreman. Shaft, 200 feet deep. No. 1 seam of coal, 5 feet thick. Fan ventilation, double entry system. Employs 21 pick miners, 4 cutters, 20 loaders and 18 day men. Four visits made. February 5th, May 25th, former orders complied with; mine in fair condition. August 7th, tested safety catches and found them in good working order. November 13th, ordered 8 posts put in the mouth of No. 5 room, No. 2 entry, where there was a dangerous roof. Aside from this conditions were fair.

No. 19.

Located on the P., Ft. W. & C. and W. & L. E. R. R.'s, near Sippo, Ohio. Operated by the M. C. M. Co., Massillon, Ohio. Wm. Baumgardner, Massillon, Ohio, superintendent, and Wm. Moffett, Massillon, mine foreman. Shaft, 157 feet deep. No. 1 seam, 4 feet thick. Double entry system, fan ventilation. Forty-eight miners and 16 day men employed. Four inspections made. February 6th, former orders complied with. June 30th, on my visit found south entries being driven toward an abandoned mine, known as the Forest Mine. There was a great deal of water coming through the coal; some of the miners were becoming very much alarmed about it. I notified Mr. Baumgardner, also Mr.

Hornickel, general manager, that they would have to secure a map of the abandoned mine and compare it with that of theirs, in order that the distance between the two mines might be located, to which they agreed. September 29th, on my visit, learned that these entries had gone into very low coal and trouble. They commenced to remove the pillars and work back, the danger being over. December 24th, mine found in fair condition for pillar work.

No. 20.

Located near Canal Fulton, Ohio, on the Pennsylvania R. R. Operated by the M. C. M. Co., Massillon, Ohio. Wm. Baumgardner, Massillon, Ohio, superintendent; Daniel W. Heinbuck, Canal Fulton, mine foreman. Shaft, 214 feet deep, No. 1 seam, 4 feet thick. Double entry system, fan ventilation, and employs 75 miners, 2 cutters, 6 loaders and 20 day men. Five visits made. January 17th, I was notified by a number of men who are employed in this mine that it was very dry and dusty. They requested me to visit it, which I did, and found it to be true. This was the driest mine that was ever opened in the district. I found 70 miners employed, working in entries and rooms so close together that at shooting time the smoke was very thick and strong. It being a hard coal to blast, it required great quantities of powder. I considered it very dangerous. They are making preparations to install the chain machine with compressed air, which would make it more dangerous with dust. I notified Mr. Hornickel, general manager, that the bug-dust would have to be taken out of the mine, and in the meantime he had better install a sprinkling system. He told me that he noticed when in the mine that it was very dry, and he has agreed to install the sprinkling system. May 27th, on my visit, I found four men engaged in driving the main entries. They have built two large sprinkling cars, which I suggested on my former visit. They sprinkle the haulages as often as is necessary. The bug-dust is all removed from the mine, which makes it considerably safer. September 11th, I found they had driven through a rock tunnel into a new basin of coal, which gives off considerable water. The roads that were dry and dusty are wet from the water running out of the cars as they are hauled to the bottom of the shaft. This makes it much safer as far as dust is concerned. October 16th, called to test scales. Tested and found incorrect. December 7th, mine in good condition.

Elm Run No. 1.

Located near Massillon, Ohio, on the W. & L. E. R. R. Operated by the Massillon Elm Run Coal Co., Cleveland, Ohio. J. L. Green, Massillon, Ohio, superintendent, and Geo. Bullock, same place, mine foreman. Shaft, 190 feet, No. 1 seam, $3\frac{1}{2}$ feet thick. Double entry system, ventilated by fan. Fifty miners and 20 day men are employed. Three visits made. February 12th, former orders complied with; mine in good condition. May 29th and August 4th, mine in good condition for pillar work. Abandoned September, 1903.

Elm Run No. 5.

Located near Elton, Ohio, on the W. & L. E. R. R. Operated by the Massillon Elm Run Coal Co., Cleveland, Ohio. J. L. Green, Massillon, O., superintendent; Lewis Brenkamp, Navarre, Ohio, mine foreman. Shaft opening, 110 feet deep into the No. 1 seam of coal, 4 feet thick. Worked on the double entry system, fan ventilation. Employs 70 miners and 20 day men. Two visits

made. September 14th, found the mine in operation after a suspension of nearly 3 years. They commenced to pump water on July 16th. Five pumps were running day and night. Two 10-inch, two 6-inch and a 5-inch pump. They got the water out on September 4th. I found 3 men engaged in cleaning up and repairing brattices. It will require several days' work before they will be in shape to ship coal. December 28th, ventilation deficient in No. 5 entry. Ordered a door put up and a breakthrough closed. Aside from this the mine is in fair condition.

Elm Run No. 6.

Located near East Greenville, Ohio, on the same railroad, and is operated by the same company as Nos. 1 and 5. J. L. Green, Massillon, Ohio, superintendent; H. Williams, Canal Fulton, Ohio, mine foreman. Shaft opening, 215 feet deep, No. 1 seam, 4 feet thick. Double entry system, fan ventilation. Employs 35 miners and 18 day men. On February 20th, mine found in good condition for pillar work.

Elm Run No. 7.

Located south of Navarre, on the W. & L. E. R. R. Operated by the Massillon Elm Run Coal Co., Cleveland, Ohio. Philip Sonnhalter, Massillon, Ohio, superintendent; M. Davis, Massillon, Ohio, mine foreman. This is a new shaft, 214 feet, into the No. 1 seam of coal, 18 inches at this point. Double entry system. Exhaust steam is used as a mode of ventilation. June 17th, on my visit, learned that the company was undecided as to whether they would proceed any further or not with this work, there being so much trouble. After due consideration, and drilling several holes, they commenced driving two entries, which were driven about 600 feet, piercing a fine vein of Massillon or No. 1 seam of coal, which is about 5 feet in thickness. October 22nd they were making preparations to sink the second opening.

McGinty.

Located near Louisville, Ohio, on the Pennsylvania R. R. Operated by the Louisville Brick and Tile Co., Louisville, Ohio. E. Jones, Louisville, Ohio, superintendent and mine foreman. Drift opening, No. 6 seam of coal and clay. Furnace ventilation. Worked on the single entry system. Employs 32 miners and 10 day men. Four visits made. January 31st, mine in good condition. May 7th, visited and found idle. On making my inspection I found 6 men re-timbering the main entry. The mine will resume operation in the near future. September 16th, in good condition. December 21st, ventilation deficient in No. 4 entry. Ordered brattice put up and a breakthrough closed.

Hipp.

Located near Newman, Ohio, on the Pennsylvania R. R. Operated by Massillon Stone and Fire Brick Co., Massillon, Ohio. Sidney Preece, Massillon, Ohio, R. R. No. 1, has full charge. Drift opening into clay seam, 5 feet thick. Worked on the double entry system. Has furnace ventilation. Employs 8 drillers, 8 loaders and 5 day men. Four visits made. January 23rd and May 5th, mine in fair condition. July 20th and November 20th, mine in good condition.

Sippo No. 2.

Located near North Lawrence, Ohio, on the Pennsylvania R. R. Operated by the Eberhardt Clay Co., Massillon, Ohio. John Yost, Massillon, Ohio, has

full charge. Drift opening into a clay seam which is 5 feet thick. Furnace ventilation. Twelve miners and 2 day men employed. Four visits made, January 23rd, May 5th, July 20th and November 20th. On each occasion the mine was found in good condition.

Pocock No. 3.

Situated near East Greenville, Ohio, on the B. & O. and W. & L. E. R. R. Operated by the Pocock Coal Co., Massillon, Ohio. Wm. Kutz, Massillon, Ohio, has entire charge. Shaft opening 245 feet deep, penetrating the No. 1 or Massillon seam of coal, 5 feet thick. Double entry system, fan ventilation. Employs 109 pick miners, 14 cutters, 33 loaders and 31 day men. Six visits made. February 19th, mine in fair condition. April 24th, called by the committee to make an investigation of part of the mine which was going toward New Greenville No. 3, which was abandoned and filling with water. May 12th: On May 8th received a telegram from Chief Inspector Harrison to meet him and his deputies, Jones, Turner and Morrison, at Massillon, to go to the Pocock No. 3 mine and make an investigation of part of it which was being worked toward New Greenville No. 3, which was abandoned and filling with water, the miners having refused to work until an investigation was made. On May 12th we met the mine committee, Mr. Gorman, district president, and Mr. Kutz, superintendent, and proceeded to the place of investigation. After making as thorough inspection as possible and consulting the maps of both mines, a meeting was held with the miners. The miners questioned the accuracy of the maps. Mr. Kutz submitted a proposition to the miners that if they would go to work he would abandon that part of the mine where the danger was supposed to be. After considerable discussion on the subject, a vote was taken by the miners, which carried, to resume work the following day. Still much dissatisfaction prevailed among them. On the morning of the 13th they gathered at the mine and reconsidered their former action, making a motion not to work until the water was pumped out of the abandoned mine. This vote was carried by a small majority. July 21st and 22nd, on my visit, I learned that the miners had resumed work on July 6th. Found the ventilation deficient in Nos. 3 and 4 entries, caused by being blocked with falls of stone. Ordered it cleaned out. There are eight rooms working toward the abandoned mine. The nearest room has about 30 feet to go to the 100-foot limit; the rooms are all being stopped as they reach the 100-foot limit. October 7th and 8th, former orders complied with. There are only two rooms working toward the abandoned mine, the rest having been stopped. A large pump had been installed and preparations were being made for the other one. December 29th, on my visit, I learned that they had tapped the abandoned mine on December 12th. At the place where the abandoned mine was tapped there was a solid pillar of 70 feet. They drove a narrow entry 40 feet, drilling test holes as they went. They stopped the entry and drilled three 30-foot holes, struck the water, and it is running off in a satisfactory manner. There was 111 feet of water in the abandoned mine shaft. On December 12th they had pumped it down to 55 feet, and no trouble experienced in controlling the water.

South Massillon.

Situated on the W. & L. E. R. R., near Navarre, O. Operated by the South Massillon Coal Co., Massillon, O. E. J. English, Massillon, Ohio, has entire charge. Shaft, 160 feet deep, penetrating the No. 1 seam of coal, which is

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Ventilated by fan. worked on the double entry system, and employs 40 miners and 22 day men. Five visits made. February 7th and June 18th mine in fair condition. July 23rd found some of the pillars being removed. Visited again September 25th and November 28th. Since my former visit one of the old rooms had caved in, releasing a large body of water. It was thought at one time that they would have to abandon the mine, but the water is being held with seven large pumps. Mr. Taggart has figured that they are pumping about 3,000,000 gallons of water in the 24 hours. The body of water is coming from the north side of the shaft, which is not in operation at the present time. The south side of the mine is in fair condition.

Taggart No. 3.

Located near Navarre, Ohio, on the B. & O. R. R. Operated by the South Massillon Coal Co., Massillon, Ohio. M. English, Massillon, has full charge. Shaft, 135 feet, No. 1 seam, 4 feet thick. Ventilated by fan, double entry system, and employs 50 miners and 17 day men. Four inspections made. February 4th and June 5th, mine in good condition. August 28th, ventilation deficient in three of the rooms, No. 3 entry, caused by the rooms raising very rapidly; ordered breakthrough cut. November 17th, former orders complied with.

Haring Wilson.

Located near Pigeonrun, Ohio, on the W. & L. E. R. R. Operated by the Haring Wilson Coal Co., Massillon, Ohio. Wm. Penman, Massillon, O., has full charge. Shaft, 116 feet deep, No. 1 seam, 5 feet thick. Ventilated by fan, double entry system. Twenty-eight miners and 8 day men employed. February 11th, mine in good condition for pillar work.

Buckeye.

Located near Canal Fulton, Ohio. Domestic mine, operated by the Buckeye Coal Co., Canal Fulton, Ohio. Jos. Griffith, Canal Fulton, Ohio, has full charge. Slope opening, 100 feet in length, No. 1 seam of coal, 5 feet thick. Fan ventilation. From 5 to 7 miners and 2 day men employed. Two visits made, February 14th and September 18th. Found in good condition.

Summit Hill.

Located near Greentown, Ohio, on the B. & O. R. R. Operated by L. E. Smith, who is superintendent; Peter Dearhoff, Greentown, Ohio, mine foreman. Drift opening. No. 4 seam of coal, 5 feet thick, including a strata of stone in the center about 4 inches thick. Furnace ventilation, single entry system. Twelve miners and 3 day men employed. Three visits made February 18th, ventilation deficient in No. 2 entry; July 8th and October 27th, found in good condition.

Willow Grove.

Located near West Brookfield, Ohio. Domestic mine, operated by the Willow Grove Co., Massillon, Ohio. C. F. Smith, Massillon, Ohio, has full charge. Shaft opening, 147 feet deep, entering the No. 1 seam, 3 to 3½ feet thick. Ventilated by exhaust steam. Employs 8 miners and 4 day men. Four visits. February 22nd and June 19th, second opening completed, safety catches and cover on cages and gate on shaft; mine in good condition. September 4th, found ven-

tilation deficient, caused by fall of slate at the bottom of the second opening. Ordered it cleared out; also a check door in No. 1 west entry, between Nos. 4 and 5 rooms. Traces of gas have been found in this mine. Notified Mr. Smith that the mine must be examined by a competent person every morning before the men went down the shaft. He has a safety lamp and has agreed to comply with the order. December 23rd, on my visit, found my former orders complied with. Found traces of gas in second east or No. 2 entry. Ventilation was carried up by a canvas from the breakthrough, which removes the gas, making it perfectly safe.

North Berlin.

Located near New Berlin, Ohio. Operated by G. F. Smith Coal Co., New Berlin. F. Smith, New Berlin, Ohio, has full charge. Shaft, 40 feet deep, No. 4 seam, 5 feet thick, including a strata of stone in the center. Furnace ventilation. Two cutters, 8 loaders and 4 day men are employed. Two visits made, February 18th and July 8th. Mine found in good condition.

Wise.

Located near Canton, Ohio. Operated by the Wise Bros. Coal Co., Canton, Ohio. Clark Wise, Canton, has full charge. Drift, No. 4 seam, 4 feet thick. Ventilated by furnace. Employs from 4 to 9 miners and 2 day men. Two visits made. September 9th, mine in good condition for pillar work. November 21st, called to investigate fatal accident of Eugene Petterman, who was killed by a fall of slate while removing pillars.

West Brookfield.

Located at West Brookfield, Ohio. Operated by Cossock Coal Co., Massillon, Ohio. Fred Cossock, Massillon, Ohio, has full charge. Drift, No. 1 seam of coal, 2½ feet thick. Furnace ventilation. Employs 7 miners and 1 day man. Three visits made. February 22nd and June 19th mine in fair condition. December 23rd, ventilation deficient, caused by the return air course being blocked with dirt. Ordered it cleaned out and the stack on the air shaft rebuilt.

Lahmiller Nos. 1 and 2.

Located near Waco, Ohio. Domestic mine, operated by J. G. Lahmiller, Canton, Ohio, who has full charge. Drift openings, No. 6 seam, 3 feet thick. Has furnace ventilation. Fifteen miners employed in the two mines. Two visits made, February 28th and September 8th, and found in good condition.

Sunnyside.

Located near North Industry, Ohio. Operated by the John Plaskett Coal Co., North Industry, Ohio. Drift, No. 6 seam, 3 feet thick. Furnace ventilation. From 6 to 8 miners and 1 day man are employed. Two visits made, February 8th and September 9th. Found conditions fair.

N. F. P. No. 1.

Situated on the W. & L. E. R. R., near Osnaburg, Ohio. Operated by the National Fire Proofing Co., Canton, Ohio. John Murley, Canton, Ohio, superintendent; Albert Hale, Osnaburg, Ohio, mine foreman. Drift, No. 5 seam of

coal which is 3 feet thick. Furnace ventilation. Twenty-four miners and six day men employed. Three visits made. April 20th, in fair condition. July 27th, ventilation deficient in No. 3 entry. October 29th, mine in compliance with the mining law.

N. F. P. No. 2.

Located near Waynesburg, Ohio, on the Pennsylvania R. R. Operated by the same company as No. 1. John Murley, Canton, Ohio, superintendent; Wm. Sprankle, Waynesburg, Ohio, mine foreman. Slope, 158 feet in length, penetrating the No. 5 seam of coal and clay. Coal 3 feet; clay varying from 5 to 8 feet in thickness. Fan ventilation. Two visits made. April 21st, visited and found idle; suspended indefinitely. The company notified me they were going to resume operations at this mine. May 15th, visited the mine in company with Mr. Turner and Mr. Morrison, district inspectors, for the purpose of making an investigation regarding the water in the abandoned mine in the No. 6 seam, which overlays the No. 2 mine or the No. 5 seam of coal. No. 2 mine has been suspended since February. After giving each mine as thorough investigation as possible, decided that the water must be pumped out of the No. 6 seam before the mine could resume operation, and be kept out while the No. 2 mine was working. An order was given to this effect.

Tunnel.

Located near Osnaburg, Ohio, on the W. & L. E. R. R. Operated by the Tunnel Coal Co., Cleveland, Ohio. L. E. Smith, Cleveland, superintendent; T. Meiser, Osnaburg, Ohio, mine foreman. Drift, No. 6 seam, 3 feet thick. Furnace ventilation. Ten miners and 2 day men are employed. April 20th, on my visit, found this mine had been reopened. The ventilation was deficient, caused by the furnace being out of repair; ordered it rebuilt. The mine foreman will comply with the order.

Whittacre No. 5.

Situated on the Pennsylvania R. R., near Waynesburg, Ohio. Operated by the Whittacre Fireproofing Co., Waynesburg. J. H. Milner, same place, has full charge. Drift, No. 5 seam of coal and clay; coal 3 feet, clay 6 feet. Furnace ventilation. Ten miners, 4 drillers and 9 day men employed. Two visits made. April 21st, mine in good condition. July 29th, ventilation deficient in No. 3 entry; stopped it until a breakthrough was made.

Whittacre No. 6.

Located near No. 5, on the same railroad and under the same supervision as No. 5 mine. Drift opening, No. 6 seam of coal and clay. Coal 3 feet; clay varying from 5 to 7 feet thick. Furnace ventilation. Eleven miners, 4 drillers and 6 day men employed. Two visits made, April 21st and July 29th. Mine in compliance with the mining law.

Whittacre No. 3.

Remained suspended throughout the year.

Indian Run.

Situated on the W. & L. E. R. R., five miles south of Osnaburg, Ohio. Operated by the Steiner Coal Co., Canton, Ohio. David Carl, Osnaburg, Ohio, has

full charge. Drift opening, No. 6 seam, $3\frac{1}{2}$ feet thick. Double entry system, rope and mule haulage, furnace ventilation. Employs 45 miners and 15 day men. Two visits made. April 22nd, ventilation deficient in No. 4 entry; stopped it until breakthrough was cut. Ordered a door repaired in No. 3 entry. Found a boy working with his brother who was 14 years of age. Stopped him and sent him out of the mine. July 28th, former orders complied with; mine in good condition.

Kime No. 1.

Located near Mapleton, Ohio, on the W. & L. E. R. R. Operated by the Kime Brick and Tile Co., Mapleton, Ohio. Geo. Hoover, Osnaburg, Ohio, has full charge. Drift opening, No. 6 seam, coal 3 feet, clay 6 feet. Furnace ventilation. Nine miners and 2 day men employed. Two visits made, April 23rd and July 30th, and mine found in good condition.

Kime No. 3.

Located near No. 1 and on the same railroad. Operated by the same company. Geo. Hoover, Osnaburg, O., has full charge. Drift opening, No. 6 seam, coal 3 feet, clay 6 feet. Furnace ventilation. Employs 8 miners and 3 day men. Two visits made, April 23rd and July 30th. On making inspection I discovered two boxes of dynamite stored in the mine; ordered them taken out. Notified the parties that only a day's supply could be taken into the mine at any time. Mine in good condition.

Robertsville.

Situated near Robertsville. Owned and operated by the Caun Coal Co., Canton, Ohio. Transportation W. & L. E. R. R. Thos. Wolfe, Osnaburg, Ohio, has full charge. Drift opening into the No. 5 seam of coal, 3 feet thick. Furnace ventilation and employs 18 miners and 4 day men. Two visits made. April 23rd, ventilation deficient in face of No. 2 entry. Ordered a breakthrough cut. July 30th, ventilation deficient, caused by the return air course being blocked with dirt. Ordered it cleaned out.

Empire.

Located near Louisville, Ohio, on the Pennsylvania R. R. Operated by the Empire Clay Co., Louisville, Ohio. Oliver Broombaugh, Louisville, Ohio, superintendent; Peter Fullmer, Osnaburg, Ohio, mine foreman. Shaft, 75 feet deep. No. 5 seam, coal 3 feet, clay 6 feet. Exhaust steam is used for ventilation. Employs 6 miners and 3 day men. May 7th, in fair condition.

Edgefield.

Located near Edgefield, Ohio. Operated by the Silver Creek Coal Co., New Berlin, Ohio. R. Allen, New Berlin, Ohio, superintendent. Ed Russell, Canton, Ohio, mine foreman. Slope, 150 feet in length, No. 4 seam, 4 feet thick. Ventilated by exhaust steam. Employs 8 miners and 4 day men. Two visits made. June 15th, second opening completed, stairway built and the mine in good condition. September 30th, found the ventilation deficient; ordered breakthrough cut.

C. H. B.

Remained suspended through the year.

Canton Sparta Clay.

Located near Sparta, Ohio, on a branch of the B. & O. R. R. Operated by the Canton Sparta Clay Co., Mineral City, Ohio. James Hutchinson, Sandyville, Ohio, has full charge. Drift opening, No. 1 seam of clay, 6 feet thick. Furnace ventilation. Employs 8 miners and 2 day men. Visited July 9th and found the ventilation deficient in Nos. 3 and 4 rooms; stopped them until breakthroughs were cut. It will require about 3 days to cut the breakthroughs.

Fox Run.

Located near North Industry, Ohio, on the B. & O. R. R. Operated by the Nimishilling Coal and Mineral Co., Lodi, Ohio. Wm. Llewellyn, Canton, Ohio, has entire charge. Drift opening, No. 4 seam of coal, 5 feet, including a strata of stone in the center. Furnace ventilation, double entry system. Ten miners and 5 day men employed. Two visits made, July 9th and September 10th. No coal is being mined in this mine at present. Ten men were engaged in shooting down limestone and loading it, putting it through a crusher on the outside to be used on the public highway.

Sonnhalter.

Located north of Canton, Ohio. Operated by the Sonnhalter Coal Co., Massillon, Ohio. Philip Sonnhalter, Massillon, Ohio, has full charge. This is a new shaft, 60 feet deep, entering the No. 4 seam of coal, which is 4½ feet thick. Ventilated by exhaust steam, worked on the double entry system. July 10th and September 17th, found 4 men engaged in driving entries. Ordered cover on cage and gates on shaft.

Massillon Crystal.

Located near Crystal Springs, Ohio, on the Pennsylvania R. R. Operated by the Massillon Crystal Coal Co., Massillon, Ohio. Wm. Crookston, Massillon, Ohio, has full charge. Shaft opening, 150 feet deep, No. 1 seam, 4 feet thick. Double entry system. Exhaust steam ventilating power. Employs 24 day men. Three visits made. August 5th and October 10th, found them timbering and doing repair work in the shaft, which had not been completed by Mr. Crookston's predecessor. December 22nd, found 4 men engaged in driving the communication to the second opening. The others were shooting bottom and making a pump room.

Booth.

Located near Justice, Ohio. Operated by the Booth Coal Co., Navarre, Ohio. B. H. Evans, Navarre, Ohio, has full charge. Drift opening into the No. 3 seam, 3 feet thick. Furnace ventilation. Six to 8 miners and 2 day men are employed. August 31st, ventilation deficient in Nos. 1 and 2 rooms, in No. 2

entry. Ordered a canvas put up between Nos. 1 and 2 rooms; also a break-through cut in No. 2 room.

Sheatzley.

Located near North Industry, Ohio. Operated by Fred Lahmiller, North Industry, Ohio, who has full charge. Drift opening, No. 6 seam, which is 3 feet thick. Furnace ventilation. Employs 7 miners and 2 day men. September 10th, mine in good condition.

St. Elmo.

Located near Canton, Ohio. Operated by the Johnson Rine Coal Co., Canton, Ohio. L. C. Johnson, Canton, Ohio, has full charge. Drift opening, No. 4 seam, 4½ feet thick. Furnace ventilation. Employs 6 miners and 2 day men. Visited September 17th; mine in good condition.

Massillon City.

Located near East Greenville, Ohio, on the W. & L. E. R. R. Operated by the Massillon City Coal Co., Massillon, Ohio. Wm. Penman, Massillon, Ohio, has full charge. Shaft opening, 250 feet into the No 1 seam of Massillon coal, which is 5 feet thick. Worked on the double entry system. Ventilated by exhaust steam. October 21st and December 30th, found 12 men engaged in making the bottom. The superintendent was notified to commence his second opening.

Bates.

Operated by Wm. Bates, North Industry, Ohio. Drift opening, No. 6 seam, 3 feet thick. Employs 5 miners.

Eli No. 2.

Operated by Eli Bros., Alliance, Ohio. Shaft opening, 55 feet, No. 3 seam, 2 feet 8 inches, and employs 6 miners.

Carr.

Operated by Wm. Roach, Alliance, Ohio. Shaft, 40 feet, No. 3 seam, 3 feet thick. Employs 5 miners.

Hickory.

Operated by Philip Miner, lessee, McDonaldsville, Ohio. Drift opening, No. 3 seam, and employs 6 miners and 1 day man.

Fisher.

Operated by D. R. Thomas, Justice, Ohio. Drift, No. 3 seam. Mule haulage and employs 4 miners.

Cook.

Operated by Wm. Lahmiller, North Industry, Ohio. Drift, No. 6 seam, and employs 4 miners.

Fox Run.

Operated by Bowman & Jones, North Lawrence, Ohio. Slope, No. 1 seam, 4 feet thick. Employs 5 miners.

Hess.

Operated by the Cincinnati Coal Co., Navarre, Ohio. Shaft, No. 1 seam 3½ feet thick, and employs 4 miners.

Newman.

Operated by the Newman Coal Co., Massillon, Ohio, R. R. No. 2. Slope opening, 75 feet in length, No. 1 seam, coal 5 feet thick. Employs 4 miners and 1 day man.

Iches.

Operated by John Iches, Massillon, Ohio. Shaft opening, 28 feet, No. 1 seam, 3 feet thick. Three miners and 1 day man employed.

SUMMIT COUNTY.**Turkeyfoot No. 2.**

Located near Manchester, Ohio, on the C., A. & C. R. R. Operated by the Brewster Coal Co., Akron, Ohio. John White, Barberton, Ohio, R. R., has full charge. Slope opening, 340 feet in length, No. 1 seam of coal, 4 feet thick. Ventilated by a fan, worked on the double entry system, and employs 60 miners and 19 day men. Six visits made. February 10th, mine in fair condition. February 17th, found the ventilation deficient in No. 3 entry. It was not in advance of the 60-foot limit, but it was stopped until a breakthrough was cut. May 17th, former orders complied with. Ordered a breakthrough in No. 1 entry, also in No. 3 entry. June 29th, former orders complied with. Second opening completed and stairway built, and the fan house under construction. September 15th and December 14th, on my visit I found the fan house completed, a 12-foot Brazil fan in operation and the mine in good condition.

Beechwood Massillon.

Located at Manchester, Ohio, on the C., A. & C. R. R. Operated by the Beechwood Massillon Coal Co., Cleveland, Ohio. J. J. Williams, Nimishila, O., has full charge. Shaft opening, 140 feet deep, penetrating the No. 1 seam of Massillon coal, 5 feet thick. Worked on the double entry system. Fan ventilation, motor and mule haulage. Employs 40 pick miners, 14 cutters, 4 drillers, 55 loaders and 38 day men. Four visits made. February 13th, ventilation deficient. Stopped No. 3 entry until a breakthrough was cut. June 16th, former orders complied with. August 24th, ordered a door put up in No. 5 entry; also a check door put up in No. 6 entry. December 1st, former orders complied with; mine in good condition.

Hametown.

Located near Hametown, Ohio. Operated by the J. D. Jones Coal Co., Barberton, Ohio, R. R. No. 35. Slope 118 feet in length, No. 1 seam, 4 feet thick.

Ventilated by exhaust steam. Employs 7 miners and 2 day hands. Three visits made, June 24th, September 23rd and December 17th. Mine in good condition for pillar work.

Hill.

Located near Mogadore, Ohio, on the W. & L. E. R. R. Operated by the Robinson Clay Co., Akron, Ohio. Wm. Lilly, Mogadore, Ohio, has full charge. Drift opening into the clay seam, which is from 5 to 7 feet thick. Furnace ventilation, and employs 8 miners and 2 day men. Visited July 6th and October 27th. This mine was operated in compliance with the law throughout the year.

Swinehart No. 1.

Located near Edgefield, Ohio. Operated by the Robinson Clay Co., Akron, Ohio. S. Warjon, Akron, Ohio, has full charge. Slope, 50 feet in length, entering the clay seam, which is from 6 to 7 feet thick. Furnace ventilation, single entry system. Employs 6 miners and 2 day men. Visited July 6th and found condition good.

Cottage Grove.

Located near Cottage Grove, Ohio. Operated by the Cottage Grove Coal Co., Akron, Ohio, R. R. No. 24. E. C. Burtch, Akron, Ohio, R. R. No. 24, has full charge. Slope opening, 86 feet in length, entering the No. 1 seam of coal, 3½ feet thick. Ventilated by exhaust steam. Nine miners and 3 day men, are employed. Visited August 29th. Former orders complied with; mine in good condition.

Clinton Shaft.

Operated by the Clinton Coal Co., Clinton, Ohio. Four miners and 1 day man employed.

Bell.

Operated by the Adams & Blackstone Coal Co., Barborton, Ohio. Slope, 85 feet, No. 1 seam. Three miners and 1 day man employed.

WAYNE COUNTY.

West Lebanon No. 1.

Situated on the C., A. & C. R. R., near West Lebanon, Ohio. Operated by the West Lebanon Coal Co., Cleveland, Ohio. Ed Penman, West Lebanon, superintendent; Geo. Kay, West Lebanon, mine foreman. Shaft, 101 feet deep, No. 1 seam, 5 feet thick. Double entry system, fan ventilation. Employs 30 miners and 14 day men. Visited January 20th and found them removing pillars. Abandoned April, 1908.

West Lebanon No. 2.

Located near No. 1 and operated by the same company. Ed Penman, West Lebanon, Ohio, has full charge. Slope opening, 330 feet in length, entering the No. 1 seam of Massillon coal, 5 feet thick. Double entry system, ventilated by a 12-foot Brazil fan. Four visits made. January 22nd and May 26th, ordered

brattice put in No. 2 entry. August 8th, found the ventilation deficient in No. 2 room in No. 2 entry; also ventilation deficient in No. 3 room, No. 4 entry. Ordered a check door put up. October 23rd, former orders complied with; mine in good condition. James McGill had his son in the mine, who was not 14 years of age. Ordered him taken out. The order was complied with.

Porter.

Located near Doylestown, Ohio, on the Erie R. R. Operated by the Card & Prosser Coal Co., Cleveland, Ohio. O. V. Dibble, Wadsworth, Ohio, superintendent; R. Lee, Doylestown, Ohio, mine foreman. Shaft opening, 162 feet deep, No. 1 seam of coal, 4 feet thick. Ventilated by fan, worked on the double entry system. Motor and mule haulage. Seventy miners and 19 day men employed. Visited February 26th and found them removing the pillars.

Doylestown No. 1.

Remained suspended throughout the year.

Dalton No. 14.

Located on the W. & L. E. R. R., near Dalton, Ohio. Operated by the M. C. M. Co., Massillon, Ohio. Wm. Baumgardner, Massillon, Ohio, superintendent; John LaViers, Dalton, Ohio, mine foreman. Shaft, 125 feet deep, entering the No. 1 seam, $3\frac{1}{2}$ to 4 feet thick. Double entry system, fan ventilation. Employs 43 miners and 17 day men. Two visits made. September 28th, found the mine in operation after a suspension of 5 months; conditions fair. November 18th, ordered breakthrough in No. 2 entry. Aside from this, conditions were good.

No. 21.

Located near No. 14, on the same railroad. Owned and operated by the same company. Wm. Baumgardner, Massillon, Ohio, superintendent; Geo. Swire, Massillon, Ohio, mine foreman. Shaft opening, 157 feet deep, No. 1 seam of coal, 4 feet thick. Ventilated by a fan, worked on the double entry system, and employs 78 miners and 23 day men. Two visits made. August 3rd, found the mine in operation after a suspension of nearly 4 months. Twenty-four miners were engaged in driving entries. Ordered the traveling way to the second opening cleaned out. Tested the safety catches and found them in poor condition. Ordered them repaired, which was done before I left the mine. October 20th, found several of the brattices that needed repairing. Ordered them repaired; also a breakthrough cut in No. 2 room in No. 4 entry, S. S. Aside from this, conditions were good.

Burton City.

Located near Burton City. Operated by the Burton City Coal Co., Burton City, Ohio. Chas. Chank, Burton City, has full charge. Shaft opening, 65 feet deep, No. 1 seam of coal, 3 feet thick. Ventilated by exhaust steam. Eight miners and three day men employed. Visited November 30th and ordered gate on shaft, cover on cage and brake on drum. The mine is in fair condition.

Terra Cotta.

Located near Fredericksburg, Ohio, on the C. A. & C. R. R. Operated by the Terra Cotta Coal and Clay Co., Fredericksburg, Ohio. A. W. Laughlin,

Fredericksburg, Ohio, has full charge. Drift opening, No. 5 seam, 2½ feet thick. Natural ventilation and employs 10 miners and 2 day men. Visited November 9th and found it in first-class condition.

Geute.

Located near North Lawrence, Ohio, on the Pennsylvania R. R. Operated by the Geute Coal Co., Massillon, Ohio. C. A. Kouth, Massillon, Ohio, has full charge. This is a new mine, slope opening, 280 feet in length, No. 1 seam of coal, 4 feet thick. Ventilated by exhaust steam. Will be worked on the double entry system. November 19th, found 9 men engaged in making the bottom.

California.

Seiberlin and Miller Coal Co., Doylestown, Ohio. Five miners and 1 day man. Furnace ventilation.

Gilt Edge.

Owned by A. W. Laughlin, Fredericksburg, Ohio. Drift opening, No. 5 seam. Employs 5 miners and 1 day man. Natural ventilation.

Redett.

Owned by Wm. Redett & Sons Fredericksburg, Ohio. Drift opening, No. 5 seam. Employs 4 miners and 1 day man. Natural ventilation.

Chippewa.

Operated by the Chippewa Coal Co., Marshallville, Ohio. Remained suspended through the year.

HOLMES COUNTY:

LIST OF SMALL MINES VISITED.

Bilderback No. 1.

Operated by D. M. Bilderback, Millersburg, Ohio. Drift, No. 6 seam. Employs 4 miners and 1 day man.

Bilderback No. 2.

Operated by D. M. Bilderback, Millersburg, Ohio. Drift opening, No. 6 seam. Three miners and 1 day man employed.

Uhl No. 1.

Operated by B. Uhl, Millersburg, Ohio. Drift, No. 6 seam. Employs 4 miners and 1 day man. Natural ventilation.

Uhl No. 2.

Operated by B. Uhl, Millersburg, Ohio. Drift, No. 6 seam. Employs 7 miners and 1 day man.

Hoon.

Operated by John Hoon, Killbuck, Ohio. Drift. Employs 3 miners and 1 day man.

Brooks.

Operated by Wm. Brooks, Millersburg, Ohio. Drift, No. 6 seam. Natural ventilation. Employs 4 men.

Chivellard.

Operated by E. H. Chivellard, Millersburg, Ohio. Drift, No. 6 seam, 3 feet thick. Furnace ventilation. Seven miners and 1 day man are employed.

Quillen No. 1.

Operated by the Holmes County Coal and Clay Product Co., Millersburg, Ohio. Drift opening, No. 4 seam, 4 feet thick. Ventilated by a furnace. Employs 10 miners and 2 day men.

Quillen No. 2.

Operated by G. C. Quillen, Millersburg, Ohio. Drift, No. 4 seam. Natural ventilation and employs 4 miners and 1 day man.

Mast.

Operated by A. A. Echard, lessee, Millersburg, Ohio. Drift, No. 6 seam. Natural ventilation. Employs 6 miners and 1 day man.

MINES VISITED OUTSIDE OF THE SEVENTH DISTRICT.**COLUMBIANA COUNTY.****Garside.**

May 28th, called to assist District Inspector Morrison, where an explosion occurred, three men losing their lives. June 4th, visited in company with Chief Inspector Harrison and District Inspectors Morrison and Smith, for the purpose of making an investigation as to the cause of the explosion.

West Pittsburg.

May 18th, visited in company with District Inspector Morrison. The mine being flooded with water, no inspection was made.

New House.

May 19th, ventilation deficient in Nos. 4 west and 5 east entries. Mr. Morrison ordered the miners out of the mine until it was put in lawful condition.

Hoon.

May 20th, visited with District Inspector Morrison. The mine being idle, a partial inspection was made.

Prospect Hill No. 1.

May 20th, mine in good condition.

Prospect Hill No. 2.

May 21st, this mine was found in fair condition. District Inspector Morrison ordered a second opening.

TUSCARAWAS COUNTY.**Beaver Dam and Wainwright No 2.**

These mines were visited in company with the Mining Commission and District Inspectors Turner, Jones and Smith.

EIGHTH DISTRICT

LOT JENKINS.

COMPOSED OF A PORTION OF BELMONT COUNTY.

Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio:

Dear Sir:—In compliance with the mining laws I herewith submit my first report, dating from the time of my appointment as Inspector of the Eighth Mining District, commencing June 1st, up to the close of the present year.

During the time covered by this report one hundred and fifty-five visits have been made to the different mines; seven sets of scales have been tested, and found correct. Three other visits were made to oil territories in regard to sealing of oil wells.

It is with regret that I am compelled to report twenty fatal accidents for seven months of my inspectorship, nine of which were due to falls of roof coal and stone; four by mine cars; two by electric wires, and one by coming in contact with a starting box of mining machine; two by motors and one was found dead on the stone dump at the Provident mine, the supposition being that he was suffocated from the fumes from the dump, which was burning and giving off considerable sulphur. Permanent improvements are as follows: Seven second openings have been made under my supervision, and improvements made on five others, some of which could not have been considered available on my first visit; requests had been made for these improvements by Inspector Ebenezer Jones, as well as by myself on my first visit to place these openings in good condition, and am pleased to report in most instances that they have been complied with. Four new cages with improved safety catches have been put in; three new fans erected, one replacing a furnace, and the other two larger fans than were previously in use.

When not otherwise mentioned in my report it will be understood that the No. 8 seam of coal is being worked, and that it will average from 5 to 5½ feet in thickness, and all machine mines ventilated by fans if not otherwise stated.

Upon visiting the mines in this district on my first visit found all mines of any consequence equipped with fans; in fact, there are only four shipping mines in the district which have furnace ventilation, and fans will be installed in two of these in the near future, as they are contemplating putting them in at the present time. In some of the mines where fans are installed, the ventilation along the working faces was not always up to the standard, due to various causes, the air courses not being properly taken care of. In many instances they are allowed to fall in to such an extent and offer so much resistance to the air current that it finds its way to the return air course through inferior stoppings that have been built in most cases of boards, and in time become rotted and break down, with the result that small readings are obtained at the inlet and outlet, and still more so at the head of the working places.

The making of refuge holes along the motor roads on the same side as the electric wire, is practiced in a number of the mines, and in some mines there were very few places in which to escape the motor and cars when passing. I am pleased to report, that in most instances, the management of mines have complied with my request and have provided manholes where there were none, and on the opposite side from the electric wires. This has been more readily accomplished since the enactment of the electric wire law which became effective during the year, than it was previously.

The new mining laws which came into effect during the year regulating the use of electricity in the mines, shields on mining machines, copper tamping tools, boxing and handling of explosives, etc., are being gradually complied with, but not as promptly as desired. It has been my endeavor to have them com-

plied with in a way inflicting as little hardship on the parties interested as possible, allowing a reasonable amount of time with which to comply, but always insisting that they must be complied with.

Since assuming the duties of my office, the mines have not worked very steady, work at few of the mines being fair, but work generally has been slow and a great many idle men were in evidence at all times.

Two companies in this district have been employing the services of local inspectors at their mines; the Lorain Coal & Dock Co., which is one of the largest companies operating mines in this district, have in their employ Mr. Thos. McGough, one of the former district mine inspectors of the state, and the Highland Coal Co., operating three mines in the district, employ Mr. R. C. Simpson as inspector of their mines. This practice is very commendable; it would be very gratifying indeed to the mining department to see the working places visited much oftener in the No. 8 vein of coal with its dangerous roof of soapstone and to see that proper care was taken in posting places, and believe that a number of fatal accidents could be averted, as well as the number more seriously injured which occur each year while working at the face, as a great number of the fatal and non-fatal accidents take place at the face of the working places, and in many instances are due to carelessness in posting places.

There has been very little new development in the district during the year, and no new mines have been opened up, owing to the dullness in the coal trade. A railroad has been built one-half mile west of Lafferty Station, on the C., L. & W. division of the B. & O. R. R., twenty-three miles west of Bridgeport, which will open up a large territory of coal in this county. It is being constructed as a coal road, and will connect with the main line of the B. & O. at Belmont, and the coal can either be shipped over the C., L. & W. R. R. division to the lakes and northern points, or over the B. & O. R. R., main line, affording the opportunity of shipping the coal east or into the central and western part of the state. The railroad company has already the right of way to its terminus purchased, and one company alone has several thousand acres of coal along that valley.

A great deal has been said of late in regard to the future needs of the country on account of the waste of coal, should it continue at the present rate of consumption, or should the present rate increase, as it is likely to. The thought has suggested itself that a great saving could be effected by drawing pillars, and as inspectors employed by the state, we should be empowered to see that all workable coal is taken out when working a mine, but our experience has been when the suggestion is made to any mine manager that the pillars should be drawn before abandoning certain territories, they offer the plea that the coal cannot be worked owing to the expense attached to it, in order to compete in the market, as the cost of production would be greater than the price at present obtained for coal, in consequence of which the pillars are lost for all time, the state losing that amount in money. In my judgment there is too large a per cent. of coal left in the mines that could be worked with the proper system applied, which would mean thousands of tons of coal saved each year that is now lost, and the public should be willing to pay the proper price for coal in order to justify the working of those pillars.

As to recommendations, I have none to offer other than those which have already been presented by the district mine inspectors to the State Mining Commission, and take this opportunity to thank that honorable body for the courtesy shown the department when they appeared before them to express

their views as to needed mining legislation, and trust the legislature will see the wisdom of enacting into law the recommendations submitted to them by the commission for their consideration, which should be of interest to the mining industry of the state.

In closing, I wish to thank you very kindly and all the members of the department for their kind and valuable advice and the courtesies shown me while serving as a member of the Ohio Mining Department.

Respectfully yours,

LOT JENKINS, BELLAIRE, OHIO.

Inspector Eighth District.

December 31, 1908.

BELMONT COUNTY.

Glen.

Located near Glencoe, Ohio, on the B. & O. R. R. Operated by the Belmont Coal Mining Co., Pittsburg, Pa. Slope opening, 100 feet long, and employs 230 miners and 61 day men. Three visits made. June 30th, mine in unsatisfactory condition; drainage along the main motor line in poor condition; ventilation poor in some sections; wires were hung in a loose manner; several places on entries required timbering. August 31st, ventilation and drainage improved; also improvement in hanging of wires. A great deal of timbering was yet needed. December 28th, ventilation fair, but wires not properly placed, according to orders of the Department. Instructions were given the management, with which they agreed to comply. John McMillen, Glencoe, superintendent. Three mine bosses have been employed during the year. Thos. Ivers was succeeded by Chas. Smith, and Chas. Smith by E. T. Jones, all of Glencoe, Ohio.

Black Diamond.

Situated at Neffs, Ohio. Operated by the Belmont Coal Mining Co. E. H. Lace, superintendent, Neffs, Ohio, and John Atkinson, same place, mine boss. Four visits made. July 7th, ventilation deficient for the number of men, but was well distributed, and the men were so well scattered in the mine that there was no complaint from them. Upon inquiry, found the speed of the fan could not be increased, the boiler power being limited and the engine used to operate the boilers not being of sufficient capacity. The shaft opening used as an egress by the men was also in a very wet condition. Requested mine ventilated in compliance with the law. A new boiler and engine have since been installed, the return airway cleaned up and the ventilation somewhat increased, but requested the number of men reduced in accordance with the amount of ventilation for the number of men on any one shift. September 1, little improvement had been made. September 8, conditions same as previous visit. October 21, Inspector Ebenezer Jones accompanied me to this mine. A small body of gas had been ignited while the men were going in the mine on October 17th. A pair of entries had been connected through to an old pair of abandoned entries the previous Saturday night, and when the fan was started on Monday morning, there was a small amount of gas generated on the main line, which ignited from one of the miners' lamps while they were walking in. The men were ordered out and stoppings were built with a pipe leading to the return airway to conduct any gas that might accumulate. While in the mine word was received that Edwin Johnson had been injured by a fall of stone while working at the face in room No. 22, on No. 1 west entry, proving fatal in about one and one-half hours after he was removed to his house. The management was given one week to install an engine, or the number of men would again be reduced. November 20th, called to investigate fatal accident of Wenzel Pobozeck, which has been reported. The ventilation was much improved on this visit, the engine having been installed with other improvements along the air course. Transportation, B. & O. and W. & L. E. R. R.'s.

O. & W. Va.

Located at Neffs, Ohio. Owned by same company as Black Diamond. Has been suspended all year.

Knob.

Situated one and a half miles west of Bellaire, Ohio. Operated by the Bakewell Coal Co., Bellaire, Ohio. J. H. Pearsoll, superintendent and mine boss. Two visits made, August 27th and October 16th. Idle on first visit; only partial inspection made. October 16th, mine in good condition. Requested wires placed farther back from rails. Furnace ventilation. Employs 78 miners and 17 day men. The greater part of the coal is gathered by motors. Mine idle the greater part of the year. Transportation, B. & O. R. R.

Victor.

Located near Bannock, Ohio. Operated by the Bannock Coal Co., Akron, Ohio. Shaft, 33 feet deep, and employs 20 miners and 9 day men. George W. Selway, Bannock, Ohio, superintendent and mine boss. Three visits made. July 6th, scales tested and found correct. This mine has very tender roof coal that overlays the No. 8 seam of coal found in this mine. A few places have been worked, leaving about 4 inches of the regular seam to support the roof. On July 15th, mine was again visited in company with Chief Mine Inspector Geo. Harrison. Visited again November 20th; ventilation good, but drainage poor. Found the breakthrough law not being observed. Requested all places stopped that were over the required distance, and the law strictly complied with. On the east side of the shaft there is a little better roof than found on previous visits. Transportation C., L. & W. R. R.

Long.

Located at Bellaire, Ohio. Owned by the Long Coal Co., Bellaire, Ohio. Thos. Long, superintendent and mine boss. Small mine, employing 6 men. One mining machine in use. Coal is used for domestic purposes. Mine in poor condition. Second opening traveling way is not properly taken care of, and boilers located entirely too close to the shaft. July 29th and December 11th, instructions were given to place the traveling way to the second opening in good condition or cease operation. Mr. Long promised to repair it immediately.

Suburban Clay Mine.

Owned and operated by the Suburban Brick Co., Wheeling, W. Va. Visited July 30th and found in an unsatisfactory condition in regard to the ventilation and also general safety. Requested management to cease operation until more ventilation was supplied and numerous timbers renewed along the main haulage. All work at face was stopped and a force of men started to build stoppings and necessary timbering. Eleven feet of fire clay is mined, and only 5 feet of limestone, with a large amount of surface overlaying it, causing considerable weight, necessitating very large timbers used. Mine resumed operation August 4th, with approval of the Department. Again visited November 20th and found in fair condition, but no second opening. Nine men employed. Fan ventilation. Chas. Carpenter, Martins Ferry, Ohio, superintendent, and Geo. Pyle, Bellaire, Ohio, was succeeded as mine boss by Jas. Martin, Shadyside, Ohio.

Beveridge & Green.

Located two and one-half miles from Powhatan, Ohio. Operated by Beveridge & Green. Small domestic mine, employing 5 men. Mine in fair condition. Ventilated by exhaust steam. Slope opening, 60 feet long. Pick mine.

Garrett.

Located at Bellaire, Ohio. Owned by M. T. Garrett, Bellaire, Ohio. Domestic mine, with one mining machine. Employs 6 men. Furnace ventilation. Visited August 18th and November 20th. Requested some timbering done and stoppings looked after; also furnace cleaned up, which had been allowed to become filled with ashes, retarding ventilation. Mr. Garrett willingly agreed to remedy these defects. Small slope, mule haulage. Electric power is secured from the street car line.

Pultney.

Operated by the Cambria Mining Co., Toledo, Ohio. T. H. Huddy, Shady-side, superintendent; W. H. Boring, same place, mine boss. Transportation, C. & P. R. R. Slope, 290 feet long. Four visits made, and with exception of second opening, mine in fair condition. On October 14th a local squeeze occurred on the 5th and 6th west entries. Advised abandoning those entries, as the coal could be taken out the other way, which was done. Second opening in much better condition than previously. This company has been somewhat dilatory in complying with the law in regard to shields on machines, but a promise was made to have them placed on machines immediately. Visited again on December 17th. Scales tested July 24th and found correct.

Carnegie Nail Mill.

Located at Bellaire, Ohio, on the C. & P. R. R. Owned and operated by the Carnegie Steel Co., Pittsburg, Pa. B. F. Marling, Bellaire, Ohio, superintendent and mine boss. Visited July 31st; in good condition. August 21st, mine was examined in company with the members of the State Mining Commission and inspectors W. H. Turner, 5th district; Thos. Morrison, 8th district, and Ebenezer Jones, 10th district. After inspecting the mine, and on the way out again, our party was invited to a well-arranged dining-room, where we found tables laid with an abundance of everything good to eat, and a very pleasant afternoon was spent 9,000 feet under the hill of Belmont county. The tables were tended by lady waitresses. November 27th, mine in good condition. Managers of this mine have provided an ambulance car for the care of the injured, which is kept in a dry place on the inside of the mine, always ready for use needed, and also a very comfortable hospital on the outside for the immediate care of the injured or sick.

Captina.

Located at Captina, Ohio, on the Ohio River & Western R. R. Operated by the Captina Coal Co., Armstrong's Mills, Ohio. Wm. Rankin, same place, superintendent and mine boss. Visited June 16th, in company with Inspector Es. No inspection could be made, as mine was idle and the fan not in operation; the mine generates considerable gas. September 18th, mine in good condition. Pick mine. Employs 25 miners and 7 day men. Shaft opening, 68 deep.

Columbia.

Located near Fairpoint, Ohio. Operated by the Columbia Coal Co., Akron, Ohio. D. W. Selway, Fairpoint, Ohio, superintendent; Ira Watkins, St. Clairs, Ohio, mine boss. July 20th, ventilation fair, but the same breakthrough was not being observed, places being driven beyond the 60-foot limit. Re-

quested all such places stopped and wires properly strung. October 26th, ventilation fair. Former instructions carried out in regard to breakthroughs, and wires placed in better manner. Considerable timbering yet required on entries, and second opening not in satisfactory condition on account of water and falls. Requested these defects remedied at once. Blankets and stretchers had been provided. Drift opening, employs 140 miners and 35 day men. Transportation, C., L & W. R. R.

Neff & Robinson.

Located near McClainville, Ohio. Owned by Neff & Robinson, Neffs, Ohio. Operated by G. M. Hamelton and G. W. Garlock, Bellaire, Ohio. Small mine, which furnishes coal for the brick works at McClainville, Ohio, and domestic coal around Steel. August 18th and November 19th, in fair condition, but no second opening., Drift, employing 3 men. Furnace ventilation.

Nealon.

Located at McClainville, Ohio. Owned and operated by J. C. Nealon, Bellaire, Ohio, R. F. D. No. 2. Drift opening, employing 8 miners and 2 day men. August 18th, roads in muddy condition; ventilation fair. Requested a few places timbered along entries. Furnace ventilation. Output disposed of to brick works at McClainville, Ohio, and domestic purposes in that locality.

Big Run.

Located near Dillies Bottom, Ohio. Operated by the Eastern Ohio Coal Co., Alliance, Ohio. Mine inspected in company with Inspector Jones, July 10th. The slope and air shaft had just been completed and connected; powerhouse and tipple built. December 20th, in fair condition; working away from the bottom of the slope with four entry system. Slope, 420 feet long, and will be a large mine when completely opened up. Requested that no more men be employed until stairs in second opening was completed. Ten men employed on the inside and 4 day men outside. D. B. Brooks, Bellaire, Ohio, superintendent and mine boss.

Clifford.

Located at Dillies Bottom, Ohio, on the C. & P. R. R., and operated by the Fort Pitt Coal Co., Moundsville, W. Va. A. G. Leonard, Moundsville, W. Va., superintendent, and G. W. Dawson, mine boss, was succeeded by Charles Sargent, and Sargent by Mike Wasily, Moundsville, W. Va. Slope, 420 feet long. Coal shipped by river, but preparations are being made for railroad shipment. Twenty-six miners and 15 day men employed. Inspected in company with Inspector Jones. A new 14-foot Robinson-make fan had been installed; ventilation good; found one pair of entries giving off gas. Requested canvas kept on hand to conduct the air from last breakthrough to face of entry, in order to avoid the practice of brushing. Also requested that some mode of communication, either by phone or speaking tube, installed from top of slope to bottom. July 29th, called to investigate the fatal accident resulting in the death of Andy Basdour, who was working on the night turn, and evidently had ridden up the slope on the front end of a loaded car. After it passed the knuckle 40 feet he fell off and the car ran over him, injuring him to such an extent that he died shortly afterwards. October 28th, visited by request of A. G. Leonard, superintendent, in regard to the kind of stairs they should build in

the new air shaft, which has been made 10x14 in size. December 20th again visited, as there was some misunderstanding in regard to the stairs. Insisted that the employes have the right to the use of the slope at all times, or a hoist placed in the shaft for the purpose of hoisting the men out, or that portion of the slope protected so that employes could walk up or down with freedom from coming in contact with the cars, the management agreeing to this request.

Tunnell.

Situated at Flushing, Ohio, on the C. L. & W. R. R. Operated by the Flushing Coal Co., Elyria, Ohio. J. A. Trimbath, Flushing, Ohio superintendent and mine boss. Drift. Employs 47 miners and 14 day men. Compressed air machines are used to mine the coal. Electric motor and mule haulage. Ventilation poor. A pair of entries are being driven to the outside, working from both sides, which should improve the ventilation. A squeeze took place on one pair of entries. The top in this mine is exceptionally good; rooms worked up the full distance without any post. Two visits made. August 25th and November 17th, inspections made. The No. 8 A seam is worked here, the coal being 3½ feet thick. Requested a pair of entries going outside, driven with as much speed as possible.

Lucy.

Located between Neffs, Ohio, and Stewartsville, on the B. & O. R. R. Operated by the Gordon Coal Co., Stewartsville, Ohio. Hugh Ferguson, Stewartsville, Ohio, superintendent and mine boss. June 23rd, found ventilation deficient on the west side, caused by the air course on the 3rd west having fallen in to such an extent that the area was too small. Other parts of the mine were in fair condition. Advised cleaning some of the fall and that 4th west entries be driven to daylight, which was only a short distance away, and stoppings repaired, as there was considerable leakage. August 28th, mine in about the same condition. Entry not yet driven out. December 10th, in fair condition. New opening made on 4th west, furnishing fresh air nearer to where the men were working. Ordered trolley wire rehung as ordered by the Department, which is at present too close to the rails.

Dellora.

Located near Glencoe, on the B. & O. R. R. Operated by the Highland Coal Co., Wheeling, W. Va. H. S. Reppert, Glencoe, Ohio, superintendent; Joe Oral and Stephen Fitzpatrick, mine bosses, same place. Shaft, 67 feet deep, employing 226 miners and 65 day men. Three visits made; general conditions fair, with the exception of the electric wires, which were ordered put up more securely, and the air course from the inlet shaft was requested cleaned up. December 18th, called to investigate fatal accident of Melia Menzich, who was killed by a fall of soapstone while working at the face in No. 1 room on second face entry off second north.

Hall & Gilhooley.

Located at Bellaire, Ohio. Owned and operated by Hall & Gilhooley, Bellaire, Ohio. Domestic mine, employing 10 miners and 2 day men. One mining machine in use, power being secured from the street car line. An additional opening has been made near the face of the workings and a 4-foot fan installed in place of furnace. Two visits made, and mine in first-class condition. P. F. Gilhooley, Bellaire, superintendent, and John D. Hall, mine boss.

Johnson.

Located at Pipe Creek, Ohio, on the C. & P. R. R. Operated by the Johnson Coal Co., Bellaire, Ohio. George Johnson, Dillies Bottom, Ohio, superintendent. and Jas. Cook, Shadyside, Ohio, mine boss. Ninety miners and 25 day men employed. Slope opening. Two visits made. July 28th several places required timbering on motor haulage. Also requested additional manholes along the motor line. Second opening was not in good condition. Requested same be given attention. November 11th, ventilation at face of works was poor, due to a fallen-in air course. Two new air courses were being driven around the fall, which, when completed, should improve ventilation. The second opening could be used for traveling purposes, but was not in good condition. Requested ventilation improved, also second opening. Also requested a supply of blankets and stretchers kept on hand for care of the injured. Compressed air and electric chain machines are used to mine the coal.

Black Oak.

Situated 3 miles east of Flushing, Ohio, on the C., L. & W. R. R., and operated by the Kennon Coal Co., Cleveland, Ohio. Three visits made. July 2nd, found the breakthrough law not strictly complied with; ordered all such places stopped. Also two boys under legal age were sent out of the mine. Safety catches on cages were not in good condition; requested that no one be allowed to ride on them. October 6th, investigated fatal accident to Celest Gilla, who was killed while driving on the 8th west entry and riding down a small grade on the front end of the trip, fell off the car and was so seriously injured that he died in a short while after being extricated from under the car. Mine was also inspected. Ventilation unsatisfactory, and recommended to the Chief of the Department that he write the company, recommending that an opening be made close to the face of the work, as the mine was becoming too extensive for the present fan to ventilate. Also requested wires placed in better condition along the motor line. Two new cages, with improved safety catches, have been installed. The St. Clair Co., Cleveland, Ohio, took charge of this mine on July 1st, 1908; on my last visit Chas. Llewellyn was employed as superintendent, and Hugh Gaffney as mine boss, both of Flushing, Ohio. Shaft opening 87 feet deep.

Kennon.

Located about one and a half miles west of Flushing, Ohio, on C., L. & W. R. R. Operated by the Kennon Coal Mining Co., Cleveland, Ohio. Frank Cory, Flushing, Ohio, superintendent; Geo. Millward, same place, mine boss. Drift opening, employing 68 miners and 33 day men. Two visits made. August 26th, considerable black damp was coming from old workings. Second opening in very bad condition from water and falls. Orders were given to have the fan running at least two hours before starting time. Also requested second opening cleaned up and timbered, and some timbering done on the motor road. November 16th, found improvement, but still found water at second opening. A pump is being installed for handling the water. Fan is being started as requested and considerable timbering done along the motor line. The No. 8 seam of coal is worked here with machines. The soapstone is left up, leaving from 4 to 5 inches of the original vein for roof, making the seam that is worked $4\frac{1}{2}$ feet in thickness.

Lansing.

Located on the C., L. & W. R. R. and operated by the Lorain Coal and Dock Co., Columbus, Ohio. James W. Johnson, Bridgeport, Ohio, superintendent; Wm. Slater, Blaine, Ohio, mine boss. Drift opening, coming to the same tippie. Three visits made, one in company with the Mining Commission. Mine in fair condition, but return wires were on the opposite side of the entry from the trolley line. December 1st, ventilation on the part called the north was not very good; requested improvement. Also requested additional manholes made along the motor lines. September 13th, investigated fatal accident to Mike Deicho, as previously reported. This is one of the largest mines in this district. Three fans are used for ventilation and 244 miners and 80 day men employed.

Wheeling Creek Nos. 1 and 2.

Located two miles west of Bridgeport, Ohio, on the C., L. & W. R. R. Operated by the Lorain Coal and Dock Co., Columbus, Ohio. J. E. Waters, Bridgeport, Ohio, superintendent, and Gilbert Hanson, same place, mine boss. Two drift openings coming to the same tippie. Two visits made. Found in good condition on each visit. Especially are the electric wires well placed. This is a large mine and will in the near future require an opening near the face or another fan installed, as it will soon be too extensive for the present fans. Employs 337 miners and 137 day men.

Crescent 2½.

Located on the C., L. & W. R. R. Operated by the Lorain Coal and Dock Co., Columbus, Ohio. Jas. R. Birkbeck, Bridgeport, Ohio, superintendent, and Wm. Embleton, Blaine, Ohio, mine boss. Drift opening employing 158 miners and 42 day men. Two visits made. Visited June 17th, with Ebenezer Jones, Inspector of the 10th district. Ventilation deficient for the number of employees. This mine is connected with Crescent No. 4, the air being used first to ventilate the No. 4 and then conducted around No. 2½ on its return to the outlet. Requested improvements made or the number of men reduced. September 3rd, found one of the ventilating fans removed to where the two mines intersect, which made some improvement, but not sufficient for the number of men employed. Requested number of men reduced to comply with the law. The management willingly agreed to comply with this request. Several of the manholes along the motor line were on the same side as the live wire, but the management had others made on the opposite side as soon as the wire law became effective; otherwise mine in fair condition.

Crescent No. 3.

Owned and operated by the Lorain Coal and Dock Co., Columbus, Ohio. Located on the C., L. & W. R. R. Same superintendent as the 2½ mine, with W. J. Redfern, Crescent, Ohio, mine boss. Drift, employing 100 miners and 31 day men. Three visits made. July 14th, ventilation fair; return wires were laying on the floor on the opposite side from the live wire. Requested them put up on the same side as the live wire. A few places were driven beyond the distance for breakthroughs; requested all such places stopped. September 7th, investigated accident resulting in death of Adolph Pastor. Found ventilation fair. Requested manholes made on opposite side from wires. A

new opening is being made from the outside to connect with the interior of the mine, which will shorten the haulage; also provide a shorter distance for the air to travel, and should make the mine in first-class condition.

Crescent No. 3½.

Located same place as the two previous mines, the coal from all three mines being dumped over the same tippie. Owned and operated by the same company. J. R. Birkbeck, superintendent, and Richard Delbridge, Maynard, Ohio, mine boss. Drift, 57 miners and 20 day men being employed. Two visits made. Stoppings are not carried forward as close as they should be. Requested both positive and negative wires placed closer to the roof. Otherwise mine in good condition. Visited August 5th and October 29th. Transportation, C., L. & W. R. R.

Crescent No. 4.

Owned and operated by same company. Transportation, C., L. & W. R. R. Located at Crescent, Ohio. Drift, employing 50 miners and 12 day men. Visited June 17th, in company with Inspector Jones of the Tenth district. Found in good condition, securing the air from two fans ventilating the two mines, 2½ and No. 4 being ventilated by the same current.

Morgan (Long & Winder.)

Domestic mine, located at Bellaire, Ohio. Operated by Robert and Wm. Long, Bellaire, Ohio. Coal is retailed in the vicinity of Bellaire. Mine closed down by Inspector Jones in the early part of the year for lack of ventilation. Mine was worked on the Klee side of the hill until the two mines were connected. Ventilation fair. Requested some timbering done along the main entry; also second opening kept available, since connections have been made. A small mine fire took place on the Klee side of the hill, the pillars catching fire from the furnace, which gave them some trouble for a few days in extinguishing it. Pick mine, 10 men employed. Furnace ventilation. - Robert Long, Bellaire, Ohio, superintendent, and Wm. Long, same place, mine boss.

Edge Hill.

Owned and operated by the Morgan Coal Mining Co., Bellaire, Ohio. Located at Bellaire, Ohio. Transportation, C. & P. R. R. Drift opening. Employs 58 miners and 10 day men. Three visits made. June 15th, in company with Inspector Jones of the 10th district, found breakthrough law not strictly observed. All such places stopped, and ordered the stoppings carried forward and manholes cleaned out along the motor road and additional ones made. Suggested the installation of a fan. September 9th, ventilation poor; drains not good. Orders were given to keep blankets and stretchers on hand for care of injured, there being no supply at the mine. Also to improve ventilation or the number of men would be reduced. Management agreed to have fan on the ground within 30 days. December 24th, mine in poor condition. Second opening could not be traveled without going through considerable water. The mining laws were being disregarded to such an extent that I requested the Chief Inspector to write Mr. Morgan. This was done and orders given to either place the mine in proper condition or it would have to be closed down.

Furnace ventilation, but the mine is becoming so extensive that it will soon be inadequate for ventilation. Jacob Long, Shadyside, Ohio, superintendent and mine boss.

Meister.

Located at Bridgeport, Ohio. Operated by Meister Bros., Bridgeport, Ohio. Domestic mine, employing 5 men. Compressed air punching machine is in use. Visited September 11th; not in good condition. Requested improvement, to which the management readily agreed. Chas. Meister has entire charge. Furnace ventilation.

Kirkwood.

Owned and operated by the Moores Run Coal Co., Fairmont, W. Va. Transportation, C., L. & W. R. R. Drift. Employs 133 miners and 52 day men. Two visits made. July 21st, mine in some sections in an unsatisfactory condition; some very dangerous places being worked. Consulted with the management and they willingly agreed to abandon those places. September 4th, mine in better condition. Ventilation fair, except on 3rd and 4th entries, due to the return airway being blocked with falls of roof. Some pillars are drawn in this mine. Mine boss stated that there was a man employed looking after those places to see that proper care was taken in posting. J. J. Ross, Fairmont, W. Va., superintendent, and Wm. Heller, Bridgeport, Ohio, mine boss.

Neff No. 1.

Owned and operated by the Pittsburg Belmont Coal Co., Neffs, Ohio. Located at Neffs, Ohio. Transportation, B. & O. R. R. Franklin Neff, Neffs, Ohio, superintendent, and John Crawford, Steel, Ohio, mine boss. Drift. Employs 142 miners and 42 day men. Two visits made. June 27th mine in fair condition. Air was well distributed, but the amount was scarcely adequate for the number of men. October 30th, mine in good condition. Two pairs of entries had been intersected, shortening the distance of air travel. With other improvements, the ventilation as much better. Requested manholes along the motor road. A new Capell fan being installed and is doubtless now in operation. Owing to heavy grades, trolley motors are used in some sections of the mine.

Neff No. 2.

Operated by the same company as the No. 1 mine. Located at Neffs, Ohio, the B. & O. R. R. Franklin Neff, Neffs, O., superintendent, and John W. Rejoy, Steel, Ohio, mine boss. Drift, furnace ventilation, and employs 66 miners and 17 day men. Two visits made. July 27th and September 28th, mine in good condition. All trolley wires were being hung in compliance with orders of the Department. Orders were given to provide stretchers and blankets for the injured, as none were in readiness. The fan at the No. 1 mine will be in operation at this mine.

Pittsburg Belmont No. 3.

Located on the Belmont Central R. R., the new road being laid from Liberty to Belmont. Owned and operated by the Pittsburg Belmont Coal Co., Columbus, Ohio. Jas. Prendergast, Lafferty, Ohio, superintendent. Slope open and is a new mine. Slope and air shaft have been sunk to the coal. Railroad.

road is being built, a large force of men being employed getting it in readiness. Foundation for the power plant had been laid, when visited on June 24th. Tipple is to be constructed of structural steel and boiler and engine room building will be made of tile. Blacksmith shop, repair room and oil room, which is in one building, will be constructed of tiling. When completed, this will be a modern mine and the new road will open up a large territory of coal.

Lydia.

Owned and operated by the Purseglove Coal Co., St. Clairsville, Ohio. Located near Maynard, Ohio, on the C., L. & W. R. R. Samuel Purseglove, same place, suprintendent and mine boss. Drift. Employs 132 miners and 26 day men. Two visits made. July 23rd, ventilation deficient on two pairs of entries. Requested improvements made. The management willingly agreed to do so. Otherwise mine in good condition. November 9th, investigated and reported accident of John Sity, which proved fatal. Inspected mine and found in fair condition. One pair of entries was driven almost to the surface on the left side of the mine, which will improve ventilation, furnishing fresh air to the working places.

Provident No. 1.

Located between St. Clairsville and Maynard, Ohio, on the W. & L. E. R. R., and owned and operated by the Provident Coal Co., Cleveland, Ohio. Shaft opening, 86 feet deep, employing 382 miners and 64 day men. David Thomas, St. Clairsville, Ohio, superintendent. Wm. Liggins, same place, was succeeded as mine boss by Sony Litten. June 19th, visited in company with Inspector Jones of the 10th district, and found in fair condition, except a few places, where breakthroughs were not made at proper distance and too much refuse was being thrown in last breakthrough. Requested the law complied with in all cases. August 27th, engine room and machine shops containing generator and hoisting engine was destroyed by fire; the buildings were of brick, but by some means caught fire from the inside. On this account the mine was idle until temporary buildings could be constructed, and were later rebuilt of brick. November 24th, mine in fair condition, with exception of 2nd south entries, where stoppings were not carried forward as they should be. Requested places stopped until stoppings were built. September 25th, October 6th and December 10th, investigated cause of fatal accidents. Partial inspections were also made of the mine on each of these visits, when it was found that the management was experiencing some difficulty in having the breakthrough law complied with, the machine runners failing to cut breakthrough when it was marked off by the mine boss. Also found some impure oil being burned by some of the employes. Requested the management to have these persons comply with the law. This mine has a large production and is one of the most modern equipped mines in the district.

Pelky.

Located at Bellaire, Ohio. Operated by Israel Pelkey, Bellaire, Ohio. Small domestic mine. Ventilated by furnace and employs 7 men. Visited August 18th, and found in good condition. The mine is about worked out and will soon be finished.

Wegee.

Owned and operated by the Raven Coal Co., Wheeling, W. Va. Suspended.

Empire No. 1.

Located at Bellaire, on the C. & P. R. R. Owned and operated by the Rail and River Coal Co., Bellaire, Ohio. Wm. Maloney, Bellaire, O., superintendent, and Owen Donahue, same place, mine boss. Drift opening employing 230 miners and 68 day men. Visited June 25th. Found in an unsatisfactory condition. Scarcely any manholes along the motor road. Wires in poor condition. Breakthrough law not observed, places being found 140 feet ahead of air, and considerable dust was found on the roads. Requested all irregularities given attention, and especially the manholes along the motor road. September 25th. ventilation good, breakthroughs made more regular, but still a few places found beyond the required distance, and ordered them stopped. There was also some improvement in the hanging of wires, and a few manholes made along the motor line. October 5th, investigated death of Chas. Collins, killed October 1st, while riding out on the top of the motor; the motor ran into 15 empty cars they had lost off the empty trip while going into the mine. Louis Long and Chas. Collins were lying on the top of motor when the motor collided with the cars. The first two cars were driven up on the motor, killing Collins and slightly injuring Louis Long. December 5th, ventilation good. Manholes made almost all along the motor road, but the roads were very dirty from an accumulation of coal and dust. Also found electric wires on both sides of one motor road and ordered same removed. Requested dust and coal cleaned up and taken out from the roads. The daily output has increased in the past six months and mine in better condition than when first inspected by me. Transportation on the C. & P. R. R. and river shipment.

Empire No. 2.

Located at Bellaire, Ohio, and operated by same company as the No. 1. David Love, mine boss, Bellaire, Ohio. Slope opening, employing 174 miners and 43 day men. Four inspections made. June 26th, found breakthrough law violated. One entry found 140 feet ahead of air. Also several rooms, all unlawful places, were ordered stopped. The main motor road had been shot down to the lime rock and the sides not properly squared up, with the result that there was considerable stone falling along the road. There was also only a few places for refuge to escape the motor trip. Air deficient on first working pair of west entries. Request was made to improve all irregularities. August 4th, again visited; found in about the same condition, with considerable water on the motor road. At my request, Chief Inspector Geo. Harrison sent three other inspectors, W. H. Turner, 5th district; Thos. Morrison, 9th district, and Ebenezer Jones, of the 10th district, to assist in the inspection of this mine on August 22nd. The motor road was inspected for a distance of 4,500 feet and found in unsatisfactory condition. This, in addition to other unsatisfactory conditions found at the mine, justified the Department in writing the management a written communication, in which notice was given to make such improvements as were deemed necessary within 30 days, or steps would be taken to close the mine. September 24th, again visited, and considerable improvement had been made in several places along the motor line in order to escape the motor, and also some timbering done. The water had been removed from off the road; ventilation was not very good on this visit, and requested same brought up to the standard required by law. Found breakthrough law strictly observed on last visit. Transportation, C. & P. R. R.

Operated by same company as Nos. 1 and 2 mines. William Maloney, Bellaire, Ohio, superintendent, and D. C. Morris, Klee, Ohio, mine boss. Visited August 6th, having been idle since March 31st until August 1. First coal loaded under the new management. The breakthrough law had not been observed, both rooms and entries being driven beyond legal distance before breakthroughs were made. No second opening was available, but an escape-ment shaft had been started; also entry from inside to meet the shaft. The live electric wires in some places were found on each side of the motor road, carrying 500 voltage. Requested all wires placed on one side. Ventilation fair. August 22nd, called to investigate fatal accident of Geo. Sentoek, in company with Geo. Harrison, Chief Inspector of Mines. Found that he had been killed on his way out of the mine, having stepped into a manhole, in company with Joe Miller, to permit the motor with its trip to pass, but before the trip reached the place where they had taken refuge the motor was liberated from the cars. Having to land the trip a long distance, was running with considerable speed. After the motor passed they stepped out on the road to continue their journey, when the cars coming from behind ran on them, killing Sentoek and injuring Joe Miller. How Miller escaped death is a mystery, as he was taken out from under the first car with his neck over the rail between the wheels of the car. November 19th, mine ventilation fair; wires still on both sides of motor road; air shaft and entry connected, but not yet cleaned out, and could not be considered available. Breakthrough law complied with in all respects, and the management promised to change the wires to one side of the motor road immediately. Drift opening, employing 137 miners and 30 day men. Located three miles west of Bellaire, Ohio, on B. & O. R. R.

Lorena.

Owned and operated by the Roby Somers Coal Co., Cleveland, Ohio. Located between Maynard and St. Clairsville, Ohio, on the W. & L. E. R. R. J. O. Somers, St. Clairsville, O., superintendent; Burt Beatty, same place, mine boss. Drift opening, employing 135 miners and 24 day men. Three visits made. September 2nd, ventilation fair; breakthrough law not strictly observed. Requested all unlawful places stopped until law was complied with. Trolley wire in a few places found over room necks. Gave orders to place same on other side. Second opening not available. September 14th, called to investigate fatal accident of John Hlas, crushed by a fall of stone at the face of his room loading coal. December 2nd, ventilation good. Previous orders partially complied with. Second opening available. Manholes made along motor road, but wires not taken from over room necks. The management said they would change wires immediately.

* Franklin.

Located at Stewartsville, Ohio, on B. & O. R. R. Operated by the Raven Coal Co., Wheeling, W. Va. Sim Reynolds, Stewartsville, Ohio, superintendent; Jas. Spence, same place, mine boss. Drift, furnace ventilation. Employs 62 miners and 18 day men. July 30th, second opening not in good condition, from water and falls of roof, but it was not considered available. Requested it placed in good condition and electric wires secured. October 15th, mine in fair condition. Pump located at bottom of slope of second opening and

traveling way to opening had been timbered. Requested trolley wire placed further back from rail and manholes provided along the motor road on the opposite side from wire.

Shicks.

Owned and operated by M. J. Schick & Co., Bellaire, Ohio. M. J. Schick, superintendent, and Ed Conaway, Klee, Ohio, mine boss. Located one and a half miles west of Bellaire, Ohio, on the B. & O. R. R. Drift opening. Employs 72 miners and 20 day men. Two visits made. July 22nd, requested brick stoppings erected between entries from overcast to fan, otherwise made air-tight by some other method. Considerable air was being churned around by the fan, which is located a long distance in the mine. September 21st, mine in fair condition. Brattices had been gone over. Orders were given to have the wires placed back from rails and to keep stretchers and blankets for care of the injured. The management willingly agreed to comply with the law.

Summit Nos. 1 and 2.

Owned and operated by Summit Coal Co., Flushing, Ohio. Both mines have been suspended during the time the district has been under my charge.

Troll No. 1.

Owned by Trolls Coal Mining Co., St. Clairsville, Ohio. Located at Maynard, Ohio, on the B. & O. R. R. Jesse Troll, superintendent, St. Clairsville, Ohio; Geo. Findley, Maynard, Ohio, mine boss. Drift opening, employing 241 miners and 36 day hands. Two visits made. July 13th, considerable oil was found stored in the mine, and the return wires were not properly placed. Ordered certain changes in these matters, which the management willingly agreed to make. Ventilation fair. October 13th, ventilation deficient; 7th and 8th west entries were not free from danger as they should have been. Orders were given for these entries to be gone over and all loose stone removed, as they would only stay a short while, and would not justify timbering. Also gave orders to increase speed of fan in order to provide required amount of air, and make manholes along motor line where there were none. Management agreed to comply with this request.

Troll No. 2.

Owned and operated by same company as the No. 1 mine. Located same place, and same superintendent, Geo. Holliday, Maynard, Ohio, being employed mine boss. Drift. Employs 225 miners and 31 day men. Four visits made. July 13th, ventilation fair; return wires were placed along the floor and oil freed in the mine; also several places required timbering along entries. Requested changes and management agreed to comply with suggestion. October 11, investigated fatal accident of John Seko, a loader, who had gone to work in extra shift on a machine, and while barring the truck loose from under machine when unloading it at the face with the power connected, gave a jam and fell over dead. The man with whom he was working had his head under the truck in the same manner as Seko, but felt no effect of electricity whatever. A voltage of 250 volts is carried at this mine. October 27th, ventilation deficient on two pairs of entries. Drainage poor on main entry. Pipes were placed in an improved condition. Requested ventilation improved drainage given attention and the fan run at higher speed; also manholes added along the motor road. Management agreed to comply with this request.

quest. December 22nd, called to the mine. The previous day the machine on 5th east cut through to the old Maynard mine, releasing a small amount of fire damp, which ignited from the machine runners' lamp, slightly burning Branson Mowrey. The men were ordered out of the mine at once and all precautions possible taken for safety. Upon investigation no more gas was found coming from the old mine, but the presence of black damp was noted. Stopping was put in and two other rooms stopped. Drainage much improved; pump installed, but ventilation not up to the standard; but 7th and 8th entries west were nearing the surface, and when driven out should improve ventilation. All cross-over wires are shielded in excellent manner and several manholes provided; others are being made. Transportation, W. & L. E. R. R.

West Wheeling.

Owned and operated by the West Wheeling Coal Co., Bellaire, Ohio. Located between Bridgeport and Bellaire, Ohio, on the C. & P. R. R. Wm. Johnson, superintendent, Bridgeport, Ohio, also acts as mine boss. Drift, employing 44 miners and 10 day men. Three visits made. June 15th, mine in fair condition, but requested wires placed closer to the roof and some timbering done on the main haulage road. June 18th, in company with Inspector Jones of the 10th District, investigated fatal accident of Luiggo Marcale, who was killed while riding on front end of a trip while going in with his trip of cars. He had cut off two cars while the trip was in motion, thinking the cars would stop. Coming out he collided with the two empty cars, which had run to the end of the grade. The mule turned to the side, tangling driver and mule in the wires, both being electrocuted from 500 volts carried at this mine. September 11th, ventilation good, but breakthrough law was not observed. He requested all unlawful places stopped. Also a few other places were stopped on account of bad roof.

Virginia Hill.

(Reported in 1907 Report as Wheeling Valley.)

Owned and operated by the Virginia Hill Coal Co., Cleveland, Ohio. Located at Lafferty, on the C. L. & W. R. R. Slope opening, 95 feet long, employing 82 miners and 23 day men. Four visits made. June 24th, in fair condition. There is a very tender roof in this mine, which is well taken care of. Several places are worked under the soapstone by machines, as the stone is better roof than some of the upper coal roof. September 17th, in fair condition. Orders given to provide stretchers and blankets, and breakthroughs made larger and kept free from stone. November 23rd, tested scales and found correct. Also requested fan increased in speed, as considerable smoke was found in several places in the mine. December 7th, investigated fatal accident of Lule Packo, a trip rider on one of the gathering motors, who was killed, injured so badly that he died in about one hour later after being taken out of the mine. He was crushed between rib and motor while stepping on the motor as it was passing him. It was not known whether he struck his head against one of the timbers, or his foot slipped when getting on. He fell down and was drawn in between the side and the motor into a very limited space.

Eleanor.

Owned and operated by the Highland Coal Co., Wheeling, W. Va. Located at Warnock, on the B. & O. R. R. Shaft mine, 140 feet deep. J. C. Reppert superintendent, Warnock, Ohio, succeeded by Thos. P. Suthern as superintendent and mine boss. Three visits made. August 3rd, only two men working at timbering. Ventilation poor, as well as drainage. Second opening was not available. November 25th, ventilation improved, also drainage, but second opening was not available; no gates on the ground landing of the shaft. Requested operations to cease at the face until second opening was made available and gates placed on shaft at once. December 23rd, again visited; stairs were being placed in shaft, with assurances that same would be continued until in good condition. Requested stairs partitioned off from the current of air. Gates were on the shaft on my last visit. Fourteen miners and 5 day men employed.

Maple Hill.

Owned and operated by the Y. & O. Coal Co., Cleveland, Ohio. Located at Barton, Ohio, on the C., L. & W. R. R. Drift opening, employing 217 miners and 50 day men. Three visits made. July 1st, few places found driven beyond lawful distance ahead of air; all such places ordered stopped until the law was complied with, the fan being located quite a distance in the mine and operated by electric power from the machine line; discovered that the fan was stopped several times during the day, and requested a special wire direct from the power house connected with it. September 16th, ventilation deficient and several places on a number of entries badly in need of timber. After consulting with the management, they agreed to make an additional opening nearer to the working faces. December 9th, mine in very smoky condition, while good readings were secured at the head of entries. The greater number of the men were working double, and so much shooting done that a local squeeze took place on the fourth butt entry losing some forty places, cutting off the section where the additional opening was to have been made, making it necessary for them to drive around it before such opening can be made. Requested that entries towards opening be driven with as much speed as possible, and dust taken off and manholes cleaned out along the motor road. There was a change of superintendents and mine bosses. W. A. Williams, Barton, Ohio, was succeeded by John Whalen, Jr., same place, and James Brainbridge, mine boss, succeeded by Mat Anderson, Barton Ohio.

Boggs.

Owned by the same company as the Maple Hill. Same superintendent, and P. J. Leonard, mine boss, Barton, Ohio. Located on the St. Clairsville branch of the C., L. & W. R. R. Drift opening, employs 126 miners and 26 day men. Three visits made. July 9th, in fair condition. Requested additional manholes made along the motor road and some timbers removed. September 30th, ventilation good, but drainage poor. Several manholes had been made and timbering done. October 12th, investigated fatal accident to Staney Mostick, which has been reported.

Barton.

Owned and operated by the Y. & O. Coal Co., Cleveland, Ohio. Located at Barton, on the C., L. & W. R. R. Drift opening, employing 284 miners and 72

day men. June 22nd, mine in need of a great deal of timbering along the entries on account of danger from falling roof. Ventilation deficient on one pair of entries. Consulted with the management and a larger force of men was put to work on timbering at once. September 5th, investigated fatal accident of Joe Mackwiskey and reported same. September 29th, considerable timbering with steel I-beams had been made, and there was yet considerable to be done. Some manholes had been made, as requested, along the motor road. Ventilation was deficient on 8th face entry. Requested it brought up to the standard. November 7th, investigated fatal accident at this mine to Louis Kels, killed by coming in contact with an electric wire while crossing over between a trip of empty cars; 500 volts is carried. A new Jeffrey 8-foot fan has been installed instead of the 6-foot, which has improved ventilation, and entries are more free from danger than previously. A great deal of timbering has been done in this mine in the last six months, and is in much better condition than when first visited. W. A. Williams, Barton, Ohio, superintendent.

Buckeye.

Located two and one-half miles west of Flushing, Ohio. Operated by Harrison & Morrison Coal Mining Co., Flushing, Ohio. William Harrison, Flushing, Ohio, superintendent, and Alex. Morrison, same place, mine boss. Drift, employing 43 miners and 22 day men. Three visits made. July 16th, a partial inspection was made. September 22nd, in poor condition, a local squeeze having occurred, almost closing some of the air courses. Ventilation was very poor, but an airway was being driven in the rear of the squeeze. December 29th, mine in an improved condition. Ventilation fair, and a road had been cleaned through the squeeze, but some timbering was yet required along the haulage way. The mine is being prepared for a motor haulage. Compressed air machines are used to mine the coal, which is 3 feet 8 inches in thickness. Transportation, C., L. & W. R. R.

Taggarts.

Owned and operated by the Barton Coal Co., Cleveland, Ohio. Located on the St. Clairsville branch of the C., L. & W. R. R. George Green, superintendent, St. Clairsville, Ohio. Jabez D. Goulding, mine boss, Barton, Ohio. Drift opening, employing 103 miners and 29 day men. July 9th, mine in an unsatisfactory condition, especially the 9th west entry, where considerable timbering was required. Advised timbering done at once, or otherwise to stop hauling on that entry. Return wires were found laying along the floor. Requested same placed up along side of the positive wire, and ventilation improved. September 15th, mine in poor condition; ventilation poor and drainage not good, and only a portion of the wires placed where ordered, and in one instance a water pipe was being used for a return. Entries were better timbered. Scales tested and found correct. Requested the Chief Inspector to write the company in regard to placing the mine in better condition, and recommended that another opening be made near the face, as the return aircourse was in bad condition from falls. November 2, mine in improved condition; ventilation was better and two pairs of entries had been intersected and considerable timbering done. Return wires were put up and less water on the roads. Found lack of proper appliances for care for the injured, but the management willingly agreed to keep them in readiness.

The following mines were visited with the Mining Commission and Inspectors Ebenezer Jones, 10th District; Thos. Morrison, 9th District, and W. H. Turner, 5th District:

BELMONT COUNTY.

Lansing, Florence and Carnegie Nail Mill mines.

JEFFERSON COUNTY.

Dunglen and Roby No. 3 mines.

HARRISON COUNTY.

Roby No. 2 mine.

October 7th, 1908, in company with Inspectors Thos. Morrison and Ebenezer Jones, inspected the oil wells at Mingo, by order of the Chief Inspector, Geo. Harrison. Orders were given in regard to sealing and plugging of all wells with parties engaged in drilling in that territory.

NINTH DISTRICT

THOS. MORRISON.

USED OF A PORTION OF THE COUNTIES OF CARROLL, HARRISON
AND JEFFERSON.

the Mining Department, I
report. This report covers
31st, 1908.
of June, the sixth mining district
Columbiana, Mahoning and a portion of
my jurisdiction. By an act of the
were created, when I was then transferred
a portion of the counties of Carroll, Har-

improvements recorded for the year is 36, and
3 sets of safety catches, 13 additional or new
courses or escapementways), 9 fans and 2 sets of
were tested, 4 of which were found correct and 1
16 fatal accidents to our fellow-craftsmen during the year.
in Carroll County, 5 in Columbiana, 5 in Jefferson and 3
A detailed report of these accidents will be found in another part
of the report. It is very generally observed that one of the chief causes of
mine accidents is the lack of proper respect for the law and the general hurry
of everyone connected with the working of the mine. It is the general cus-
tom for mine foremen and superintendents to ride on the motor when travelling
from one part of the mine to the other, which has a tendency to encourage the
road men, timber men, electricians and others whose duty calls them from one
part of the mine to the other, to engage in the same practice, so that they
will lose as little time as possible. These men are willing to take the same
chances as the boss or superintendent, and if they are careless of the little
things affecting their own safety, how can they consistently discipline those
under their charge from taking the same chances? Then again we find men
working under loose top, and when told about it they will reply that they
know about it and will take it down or set a post as soon as they load the car.

We believe that both mining officials and miners as a class are endeavoring
to comply with the law, and wish to prevent accidents, but in their hurry,
which is characteristic of American life, they either neglect or overlook the
little incidents which cause the majority of accidents. As a class, miners are
fearless workmen and assume great risks in the pursuit of their daily em-
ployment, and these instances are given to show the general attitude of those
employed in and about the mines in regard to personal danger.

We hear a great deal said about discipline in the mines, and there is no
question but what there ought to be better discipline, but under present con-
ditions it is easier to talk about it than to enforce it.

In conclusion, I wish to state that my relations with the Department have
been of a very pleasant character, and wish to thank you for your sound advice
and assistance in the discharge of my duties.

Respectfully yours,

THOS. MORRISON, Sherodsville, Carroll County,
December 31, 1908. Inspector 9th District.

CARROLL COUNTY.

Sterling No. 1.

Located two miles west of Salineville, on the C. & P. R. R. Operated by Sterling Mining Co., Cleveland, Ohio. Samuel Madison, Salineville, Ohio, superintendent and mine boss. Drift opening to the Strip Vein, which is about 3½ feet thick. Fan ventilation, motor haulage, machine mining. About 116 miners and 39 day men employed. Visited four times and generally found in good condition. The law and requests of the Department are always complied with as near as possible, and this company is always willing to provide any safeguard necessary to protect their employes.

Sterling No. 2.

Abandoned.

Greer-Beatty.

Located near Magnolia, on the C. & P. R. R. Operated by the Greer-Beatty Clay Co., Magnolia, Ohio. A. S. Bucher, Mineral City, Ohio, mine boss. Drift, No. 5 seam, 3 feet 8 inches thick. Pick mining, furnace ventilation, mule haulage. Six miners and 2 day men employed. Visited once. Found in fair condition.

Magnolia Shaft.

Located at Magnolia, on the B. & O. R. R. Operated by the Magnolia Coal Co., Akron, Ohio. J. J. Dagenhard, Magnolia, Ohio, superintendent; J. Dagenhard, Jr., same place, mine boss. Shaft, 65 feet deep, No. 5 seam, 3½ to 5½ feet thick. Fan ventilation, motor and mule haulage, machine and pick mining. Visited four times. Generally found in good condition. A new haulway was made and motor haulage installed during the year and mine put in better condition for producing coal than it has been for years. Employs 12 pick miners, 6 machine runners, 32 loaders and 18 day men.

Russell Hill.

Located at Dellroy, Ohio, on the W. & L. E. R. R. Operated by the Russell Hill Coal Co., Dellroy, Ohio. D. M. Cunningham, superintendent; H. W. Merriman, mine boss, both of Dellroy. Shaft, 45 feet deep, No. 6 seam, 3½ feet thick. Furnace ventilation, mule haulage, pick mining. Twenty-five miners and 1 day men employed. Visited July 16th. Ordered safety gates put on top of shaft. July 18th tipple demolished by storm. Visited September 28th. New tipple built. Safety gates on shaft and some improvement in condition of the mine.

Somers No. 2.

Located at Sherodsville, on W. & L. E. R. R. Operated by the Somers Mining Co., Cleveland, Ohio. Fred Somers was superintendent from 1st of April until

Hon. Geo. Harris

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ANNUAL REPORT
December, when he passed to the great beyond, and the close of year found
mine in charge of Harry Harris, Sherodsville, Ohio, the mine boss. Shaft, 71
feet deep. No. 6 seam, 4 feet thick. Fan ventilation, motor and mule haulage.
Knapkins 21 machine runners. 106 loaders and 37 day men. The haulway of
this mine is always in a very muddy condition, and in order to reach their
work the miners have to wear rubber boots. The manway was in about the
same condition, but has been put in better condition for travel. Advised making
sumps along the haulways, keeping the water off, but so far this has not been
done. Ventilation, with the exception of one or two places, was good.

Horse Shoe.

Located at Lindentree, on the B. & O. R. R. Operated by the Ohio Mining
and Railway Co., Massillon, Ohio. L. Rinehart, Lindentree, Ohio, superinten-
dent; Hugh Paterson, Magnolia, mine boss. Drift, No. 6 seam, 3 feet 8 inches
thick. Fan ventilation, mule and rope haulage. Visited July 13th. Requested
that fan be installed to ventilate the mine. Visited again September 9th. Found
fan in operation, building block and cement stoppings in all the breakthroughs,
and mine in good condition.

National No. 6.

Located about 1½ miles from Magnolia. Operated by the National Fire
Proofing Co., Canton, Ohio. William Weaver, Magnolia, Ohio, superintendent;
John Williams, same place, mine boss. Drift opening; furnace ventilation; No.
6 seam of coal 3½ feet thick; about 4 feet of clay worked in connection with
the coal. Nine miners and 2 day men employed. Mine being suspended the
greater part of the year. Only one visit was made and mine found in good
condition.

Dorothy.

Located three miles north of Sherodsville, on the W. & L. E. R. R. Operated
by the Lincoln Coal Co., Sherodsville, Ohio. J. F. Myers, superintendent;
Robert Campbell, mine boss, both of Sherodsville, Ohio. Drift opening, fur-
nace ventilation, mule haulage. No. 7 seam, 4½ feet thick. Operations sus-
pended greater part of the year. Visited once and ordered second opening
made. Order was complied with, and mine in good condition.

Kirk Big Vein.

Located two miles west of Salineville, on the C. & P. R. R. Operated by
the Deveny-Kirk Coal Co., Salineville, Ohio. John Kirk has charge of the mine.
Drift opening, No. 7 seam, 4½ feet thick, fan ventilation, motor and mule
haulage, machine mining. Employs 20 miners and 6 day men. This mine has
a bad top, but is well taken care off. Three visits made, and mine always
found in good condition.

Kirk Strip Vein.

Operated by the same company as Big Vein mine. Coal dumped over same
tipple. Drift to the Strip Vein, which is about 3 feet thick. Fan ventilation,

motor and mule haulage, machine mining. Employs 12 miners and 5 day men. This vein of coal is very clean, has an excellent roof, and mine is always kept in excellent condition.

Strip Vein.

Located two miles west of Salineville, on C. & P. R. R. Operated by the Strip Vein Coal Co., Salineville, Ohio. Matthew Smith, same place, is superintendent and mine boss. This mine is owned and operated by four practical miners, all of whom work in the mine, each one doing his part, always having their mine in compliance with law and always ready and willing to do whatever the inspector requests for the betterment and protection of their employes, and the conditions are generally such that it is unnecessary to give any orders. Drift opening to the Strip Vein, which is 3 feet thick. Fan ventilation, motor and mule haulage, machine mining. Employs 8 machine runners, 51 loaders and 17 day men. Visited four times during the year.

CLAY MINES—(Carroll County).

Greer-Beatty No. 5.

Located near Magnolia. Operated by the Greer-Beatty Clay Co., Magnolia, Ohio. Visited once and found idle. Clay being stripped and loaded on the outside.

Greer-Beatty No. 6.

Also suspended and clay being stripped.

Metropolitan No. 6.

Located at Pekin, on C. & P. R. R. Operated by Metropolitan Paving Brick Co., Canton, Ohio. A. L. Currey, Minerva, superintendent; L. L. Buck, same place, mine boss. Drift, No. 6 seam, clay 6 feet thick, with $2\frac{1}{2}$ feet of coal over it. Ventilated by a 10-foot fan. Mule haulage. Twelve miners and 5 day men employed. Visited three times during the year and always found in good condition.

Sandy Valley.

Located at Malvern, on C. & P. R. R. Operated by Malvern Clay Co., Malvern, Ohio. J. F. Fisher, superintendent; Mitchel Buck, mine boss, both of Malvern, Ohio. Drift opening to No. 6 seam of clay, which is 8 feet thick with $\frac{1}{2}$ feet of coal on top. Furnace ventilation, mule haulage. Twelve miners and 7 day men employed. Two visits made during the year and mine found excellent condition.

Robinson No. 5.

Located at Malvern, on C. & P. R. R. Operated by Robinson Clay Product Co., Akron, Ohio. Geo. Polen, Malvern, Ohio, superintendent; Wm. Artzner, same place mine boss. Slope, No. 5 seam of clay 7 feet thick. Ventilated 4-foot electric fan. Mule and rope haulage. Steam locomotive hauling between the mine and works. Ten miners and four day men employed. Three visits made, and during this time an airshaft was sunk, stairway put in and installed. This mine is very wet and has a very bad top, and requires to

be well timbered to make it safe for men to work in. So far this has been done, and the orders of this Department are that no one be allowed to work without the place being properly timbered.

National No. 5.

Located $1\frac{1}{2}$ miles from Magnolia, on C. & P. R. R. Operated by National Fire Proofing Co., Canton, Ohio. Wm. Weaver, Magnolia, Ohio, superintendent; Nick Selle, same place, mine boss. Drift, No. 5 clay, 7 feet thick. Furnace ventilation, mule haulage. Four miners and 2 day men employed. Suspended forepart of the year. Resumed operation September 1st. Visited September 8th. Conditions fair.

Big Four.

Located at Oneida, on C. & P. R. R. Operated by Big Four Clay Co., Malvern, Ohio. Geo. Neidlinger, superintendent; J. H. Milner, mine boss, both of Malvern, Ohio. Drift, No. 6 clay, 8 feet thick. Furnace ventilation, mule haulage. Twelve miners and 4 day men employed. Visited July 17th. Haulways muddy. Ventilation fair.

Midway.

Located two miles west of Malvern, on C. & P. R. R. Operated by the Pittsburg & Malvern Clay Co., Pittsburg, Pa. N. A. Lewton, Malvern, Ohio, superintendent; Chas. Bixler, same place, mine boss. Drift, No. 6 seam of clay, 8 feet thick, with 34 inches of coal over it. Furnace ventilation, mule haulage. Thirteen miners and 5 day men employed. Two visits made, and on each occasion mine was found in excellent condition.

COLUMBIANA COUNTY.

Old Slope.

Located at Salineville, on C. & P. R. R. Operated by Ohio and Pennsylvania Coal Co., Cleveland, Ohio. John Walsh, Salineville, Ohio, superintendent. Drift opening, No. 7 seam, from $3\frac{1}{2}$ to 6 feet thick. Fan ventilation, motor and mule haulage, machine mining. Employs 83 miners and 30 day men. Two visits made, and while ventilation is improved since fan was moved, there is still room for improvement.

New Slope.

Operated by same company as Old Slope, and coal dumped over same tipple. Pat Maher, Salineville, Ohio, mine boss. Employs 77 miners and 22 day men. Visited April 23rd. Conditions fair.

Prospect Hill No. 1.

Located at East Palestine, on P., Ft. W. & C. R. R. Operated by Prospect Hill Coal Co., East Palestine, Ohio. Grant Hill, superintendent; Thos. Stackhouse, mine boss, both of East Palestine, Ohio. Slope, No. 6 seam, 3 feet thick. Ventilated by 10-foot fan. Mule and rope haulage, machine mining. Employs

65 miners and 15 day men. Visited May 30th, in company with Inspector W. H. Miller. Found escapementway made on south side of mine, and the mine in excellent condition.

Prospect Hill No. 2.

Located two miles west of East Palestine, on same road as No. 1, and operated by the same company. Wm. Morris, East Palestine, mine foreman. Drift, No. 7 seam, $3\frac{1}{2}$ feet thick. Furnace ventilation, mule haulage. Fifteen miners and 3 day men employed. This is a very irregular piece of coal; seems to be faulty and is only good in little pockets. Visited May 21st, in company with Inspector W. H. Miller. Conditions favorable.

Beach Grove.

Located at New Salisbury, on the C. & P. R. R. Operated by the Ohio Coal and Coke Co., Cleveland, Ohio. Isaac Thomas, Irondale, Ohio, has full charge of the mine. Drift, No. 3 seam, $3\frac{1}{2}$ feet thick. Fan ventilation, mule and rope haulage, machine mining. Employs 33 miners and 14 day men. Two visits made; one to investigate fatal accident, and one general inspection of the mine; on this occasion mine was found in splendid condition.

Newhouse.

Located at Newhouse, on P., L. & W. R. R. Operated by the Herriott Coal Co., Lisbon, Ohio. Chas. Herriott, same place, has full charge. Drift, No. 6 seam, 3 feet thick. Furnace ventilation, mule haulage, machine mining. Thirty miners and 10 day men employed. Visited May 19th in company with Inspector W. H. Miller. Found ventilation very unsatisfactory, but airshaft almost completed, which would greatly improve it. Otherwise conditions satisfactory.

Klondyke No. 4.

Located at Lisbon, on the Erie R. R. Operated by the Card & Prosser Coal Co., Cleveland, Ohio. Thos. Prosser, Lisbon, Ohio, superintendent; Ralph Lee, same place, mine boss. Drift, No. 6 seam, 2 feet thick. Fan ventilation, motor and mule haulage, machine mining. Employs 34 miners and 6 day men. Visited March 4th and June 25th, accompanied by Inspector Smith on the latter visit, when orders were given to clean air course and renew the stairs in the shaft.

Andelusia.

Located at Salem, Ohio. Operated by Jesse Shepard, Salem, Ohio. Shaft, 0 feet deep to No. 3 seam, 3 feet thick. Natural ventilation, mule haulage, pick mining. Employs 8 miners and 4 day men. Visited February 4th. Tested sales and found them correct. Recommended that fan be installed to ventilate the mine.

Beach Hollow.

Located two miles northeast of Salem. Operated by Reese Bros. T. G. Reese, Salem, Ohio, has charge of the mine. Drift, No. 3 seam, 3 feet thick. Ventilated by fire basket. Mule haulage, pick mining. Employs 14 miners and

2 day men. Visited February 25th, and as there was only one available opening a notice was posted forbidding them to work more than 10 men in the mine at any one time. Otherwise mine in fair condition.

Garside.

Located two miles northeast of Salineville. Transportation, C. & P. R. R. Operated by the Big Vein Coal Co., Cleveland, Ohio. E. G. Marshall, Salineville, Ohio, superintendent; Thos. Thomas, same place, mine foreman. Shaft, 200 feet deep, No. 7 seam, coal from 4 to 6 feet thick. Fan ventilation, machine mining, mule haulage, double entry system. As the report of the previous year will show, this mine generates gas very freely, and the management was well aware of the fact. Still the Department had considerable trouble with those connected with the operation of the mine in order to get them to exercise the necessary care required to avoid accidents, which are likely to occur where such conditions exist. In order to avoid lining the air compartment, which was a part of the main shaft, the fan, which was only 6 feet in diameter, and only a temporary arrangement, was moved from the top to the bottom of the shaft without even consulting the Department, but as long as it was kept running it produced an abundance of air, and on visiting the mine December 17, 1907, I found it well ventilated, all the stoppings built with building block and cement, the air carried to the face of the entries by canvas, and no standing gas in the mine. On or about the 10th day of January a dispute arose between the company and the miners, which resulted in closing the mine down for several months. During the suspension of operations Mr. Marshall and Mr. W. J. Wright, who was then mine foreman, with the assistance of the engineers, kept the water out and occasionally went into the mine to load coal for the boilers. On May 27th we were notified that an explosion had occurred at this mine. Inspector W. H. Miller and the writer immediately started for the scene of the explosion, but on arriving there we were informed that the bodies of the victims had been recovered, and as the fan was destroyed and there was no circulation of air in the mine, no investigation was made, but orders were given to erect a fan on top and notify the Department when they were ready for an investigation. By making inquiry, we were informed that the fan had not been in operation for several days previous to the explosion, and that Mr. Wright and Mr. Roe went down the shaft that morning with open lights and the fan not running, when they surely ought to have known better, the result being that they both lost their lives, Mr. Roe being blown into the sump, and the mule and a lot of cars on top of him. Mr. Wright was blown into the shaft, and was found there, still alive but unconscious, remaining so until he died, which was about 5 o'clock that evening. Mr. Ted Lewis, one of the engineers, had a narrow escape. He was on the cage being lowered into the mine when the explosion occurred. The force of the explosion sent the cage up into the tippie, where it was securely held by the safety catches. Part of the bottom was blown out of the cage and Mr. Lewis was found stretched across the hole unconscious, with a broken leg and a bad scalp wound. Mr. Skinner, who was one of the rescuing party, was killed by a timber falling down the shaft, while trying to extricate Mr. Wright from the debris. On being notified that the fan was erected and in operation, we returned to the mine June 6th and, accompanied by Chief Inspector Harrison and District Inspectors W. H. Miller and Alexander Smith, went down the shaft, but as the brattice in the shaft was blown out there was no circulation of air beyond the shaft bottom. We explored a part of the mine, enough to

convince us that this was purely a gas explosion, being most violent on the east side of the mine. Orders were given to line the shaft and make it airtight, so that the ventilation could be successfully carried into the mine; also to notify the Department before resuming operations. On June 22nd, Inspector Smith and the writer returned to complete our investigation. We first examined the shaft and found it lined as complete as possible. On reaching the bottom we found that the wreckage had been cleared, but no permanent stoppings built. We then started to examine the east side of the mine. At the first north entry we found a car which had evidently been blown out of this entry onto the main, turned clear over and badly smashed. The indications at this point show that the force had traveled both ways, as the door had been first blown inward, stripped off its hinges and then blown outward, leaving one of the hinges jammed between the top and the bottom, and bent outward in the middle. The other hinge was left laying on the bottom, and the door and post blown towards the shaft.

We next went into the main east entries. There we found that the force of the explosion had been outward. Cars were piled up in all kinds of shape, the irons and end-gates were bent and blown towards the shaft, and in most cases were covered by falls of roof. Next, the north face entry was entered, and there it was evident that the force of the explosion was most severe. At the end of the passway we found a trip of cars which had been standing there. They had started towards the shaft by the force of the explosion, but the first car turned across the entry at the latches and the rest piled on top of it, almost completely blocking the entry. The last cars were badly damaged, being stripped entirely of the woodwork and leaving nothing but the wheels and a mass of twisted irons. Beyond this point we found considerable gas, and were unable to penetrate in this direction very far beyond the end of the passway. We next entered the east entries on the north side, where we had to climb over falls and broken cars, and had not gone over a hundred feet until we encountered the gas and had to retreat. As we were unable to penetrate further into this side of the mine, we next went towards the south shaft, where we had to climb over falls of roof nearly all the way. We may here state that not a stopping or door was left in the east side of the mine. The west side of the mine was next examined, and with the exception of a door being blown to pieces near the shaft bottom, and two doors at the neck of the north and south entries, and one stopping blown out between the south entries, practically no damage was done on this side of the mine.

The indications were that the entire explosion occurred on the east side of the mine, which was the highest point, and traveled in the west side as well as up the shaft, as the doors on this side were blown inward. In fact, the door on the main west, which was hung to open outward, was blown through the frame and was almost intact, indicating that the force of the explosion was almost spent when it reached this point. At the face of the south entry we found the gas back to the breakthroughs and down within 18 inches of the bottom. In the main west we found very little gas and not very many falls.

We were unable to penetrate very far into the north entries on account of water, but as far as we went we found that there was no indication of any force, and the stoppings were all standing in good condition. The following orders were given in writing:

First. That safety lamps be used exclusively until stoppings are replaced and gas removed from mine.

Second. That the fan be kept running continually, and the roof made safe by timbering or otherwise, as the work of cleaning up the mine proceeds.

Third. That a large, slow-speed fan be erected on top of the shaft and made reversible.

Fourth. That this Department be notified before resuming operations, so that an inspection can be made and conditions either approved or disapproved.

July 6th, visited in company with Inspector Smith; found stoppings all replaced, having been built with building block and cement, the same as they were before the explosion. Mine well ventilated and almost ready to resume operations. After advising that they exercise better care in future, the conditions were approved and permission given to resume operations. This mine has since been equipped with a 20-foot Brazil fan, which we believe will be capable of ventilating it properly for many years to come.

This mine is now well equipped in every respect, and besides being one of the large producers, ought to be equally as safe as any in the state.

Salem.

Located between Salem and Washingtonville, on the Y. & O. R. R. R. Operated by Salem Coal Co., Salem, Ohio. Wm. Dunn, Salem, Ohio, superintendent. Drift, No. 3 seam, 3 feet 4 inches thick. Fan ventilation, mule haulage. Employs 63 miners and 17 day men. Visited February 5th. Ordered stairs renewed in escapement shaft. Otherwise mine in good condition. Later electric plant installed and coal being cut by chain machines.

Big Walnut.

Located two miles west of Washingtonville on the Y. & O. R. R. R. Operated by Card & Prosser Coal Co., Lisbon, Ohio. Thos. Prosser, Lisbon, Ohio, superintendent; J. Watters, Washingtonville, mine boss. Slope, No. 3 seam, 3 feet 4 inches thick. Fan ventilation, mule and rope haulage. Sixty-eight miners and 20 day men employed. Visited twice. Owing to an explosion which occurred in this mine November 19th, severely burning two shot firers, was requested to accompany Inspector Smith to investigate the cause of the explosion, report of which will be found in Inspector Smith's report.

Wheat Hill.

Located at East Palestine. Operated by the Wheat Hill Coal Co., East Palestine, Ohio. Jas. Fleming, same place, has charge of the mine. Drift, No. 7 seam, 2½ feet thick. Fan ventilation, mule haulage. Twelve miners and 3 day men employed. Visited May 21st, in company with Inspector Miller. Conditions commendable.

Average.

Located at Washingtonville. Operated by D. J. Smith. Slope, No. 4 seam, 2½ feet thick. Fan ventilation, mule and rope haulage. Machine and pick mining. Nine miners and 2 day men employed. Visited February 27th. Found in fair condition.

West Pittsburg.

Located at Teegarden, on the Erie R. R. Operated by Card & Prosser Coal Co., Cleveland, Ohio. Thos. Prosser, Lisbon, Ohio, superintendent; A. T.

Davis, Franklin Square, mine boss. Shaft, 156 feet deep, No. 3 seam, 3 feet 8 inches thick. Visited March 3rd. Found mine flooded. Visited May 18th, in company with Inspector Miller, when preparations were being made to take the water out.

Georgetown.

Located at Georgetown. Operated by Edward Reichenbaugh, Georgetown, Ohio. Shaft, 57 feet deep, No. 5 seam, 3 feet thick. Four miners and 2 day men employed. Visited March 31st. Orders given to work nothing but the entries being driven to connect with the second opening.

Prosser Clay.

Located at Lisbon, on Erie R. R. Operated by Card & Prosser Coal Co., Cleveland, Ohio. Shaft, 30 feet deep, No. 3 seam, 8 feet thick. Mule haulage. Ventilated by exhaust steam. Employs 11 miners and 6 day men. Visited March 4th. Found in fair condition.

HARRISON COUNTY.

Newton.

Located at Fishers, on the Pennsylvania R. R. Operated by the Newton Coal Mining Co., Dennison, Ohio. Frank Culley, Bowerston, Ohio, is superintendent and mine boss. Slope to No. 7 seam, $4\frac{1}{2}$ feet thick. Employs 6 machine runners, 32 loaders and 16 day men. Ventilated by 4-foot Rochester fan. Mule and rope haulage. Three visits made. Scales tested on two different occasions and found correct. General conditions of the mine good.

Clover Leaf.

Abandoned.

Roby No. 1—Drift No. 1.

Located at Adena, on the W. & L. E. R. R. Operated by the Roby Coal Co., Cleveland, Ohio. Wm. Moke, Adena, Ohio, superintendent; H. A. Jepson, Robyville, Ohio, mine foreman. Drift, No. 8 seam, 5 feet thick. Sixteen machine runners, 132 loaders, 4 pick miners and 37 day men employed. Fan ventilation. mule and motor haulage. These mines have a very tender roof, making it necessary to use good timber to keep them in proper condition, but to the credit of those in charge it can be truthfully said that these are the finest timbered mines in the district. The timbers are put up at a uniform height, and not more than 4 feet apart. This was formerly done with white oak sawed timber, 8x10 inches, but in the last year and a half nothing but steel eyebeams have been used, which are giving the very best of satisfaction. The haulways are kept clean and dry, with good tracks for haulage purposes. As requested, the trolley wire was all changed to the side opposite the manholes. Four visits made and mine found in good condition.

Roby No. 1—No. 2 Drift.

Operated by same company as Drift No. 1. Samuel Cook, Robyville, Ohio, mine foreman. Employs 28 machine runners, 150 loaders and 43 day men. Fan ventilation, motor and mule haulage. No. 8 seam, 5 feet thick. The coal from these two mines is dumped over the same tippie, the conditions are similar and equally well cared for, with the same kind of timbering and same regularity. A new airshaft was sunk on the south side of the mine and fully equipped as an escapementway, and the entry leading to it timbered with steel eyebeams. Three visits were made and mine found in good condition.

Majestic.

Located at Blairmont, on W. & L. E. R. R. Operated by A. G. Blair Mining Co., Toledo, Ohio. Wm. Bunney, Hurford, Ohio, is in charge. Drift, No. 8 seam, 5 feet thick. Fan ventilation, motor and mule haulage. Employs 8 machine men, 80 loaders and 33 day men. Five visits made during the year, the early part of which the haulways were in bad condition, due to insufficient timber and drainage. New escapement way was made during the year near the head of the workings. At close of year found timbering and drainage improved, but ventilation unsatisfactory.

Ewing.

Located at Ginther, on W. & L. E. R. R. Owned by Pittsburg Block Coal Co., Pittsburg, Pa. Suspended during entire year.

Adena.

Located one mile west of Adena, on W. & L. E. R. R. Owned by the Adena Mining Co., Adena, O. Visited once and found suspended, remaining so for the entire year.

MAHONING COUNTY.**McKinley.**

Located at Beloit, on P., Ft. W. & C. R. R. Operated by the McKinley Coal Co., Salem, Ohio. W. H. Dunn, same place, superintendent; John Robusch, Beloit, mine foreman. Shaft, 65 feet deep to the No. 5 seam, 3 feet 3 inches thick. Fan ventilation, mule haulage, pick mining. Employs 39 miners and 10 day men. Visited March 30th. Ordered new traveling way made to airshaft. Operations were suspended April 1st, remaining so to the end of the year.

Beach Ridge.

Located two miles west of Salem. Operated by Shriver Coal Co., Salem.

Ohio. S. E. Zimmerman, same place, mine foreman. Slope opening, No. 3 seam, $2\frac{1}{2}$ feet thick. Furnace ventilation, mule haulage. Six miners and 2 day men employed. Visited once and found in fair condition.

Greenamyer.

Located one mile east of Salem. Operated by Wm. Reese & Son, Salem, Ohio. Shaft, 90 feet deep to the No. 3 seam, 3 feet thick. Fan ventilation, mule haulage. Nine miners and 4 day men employed. Visited February 26th. Ordered water drained off escapement way and advised sinking an airshaft, which I understand has been done.

Holwick.

Located one mile east of Salem. Operated by Callihan & Allen, Salem, Ohio. Frank Allen, mine foreman. Slope, No. 3 seam, 3 feet thick, mule haulage. Fan ventilation. Nine miners and 3 day men employed. Visited February 26th. Found in fair condition.

North Lima.

Located at North Lima, on the Y. S. R. R. Operated by North Lima Development Co. E. G. Biddison, North Lima, Ohio, superintendent; David McGill, same place, mine foreman. Shaft 75 feet deep to No. 3-A seam, 27 inches thick. Fan ventilation, man haulage. Ten miners and 2 day men employed. Worked on long wall system. Visited March 6th and May 22nd. Found in good condition.

Lowellville.

Located at Lowellville, on Erie R. R. Operated by the Lowell Coal Mining Co., Youngstown, Ohio. Robert Fulton, same place, mine foreman. Shaft, 75 feet deep to No. 1 seam, which runs from 2 to 4 feet thick. Fan ventilation, mule haulage, machine and pick mining. Employs 30 miners and 8 day men. Visited March 5th and May 22nd. Found in good condition on both occasions.

Urmson.

Located at Beloit. Operated by Robert Urmson, Beloit, Ohio. Slope, No. 5 seam, 3 feet thick. Natural ventilation, mule haulage, pick mining. Employs 15 miners and 4 day men. Visited February 28th. Ordered an airshaft sunk at head of the workings. Otherwise conditions fair.

JEFFERSON COUNTY.

Witch Hazel.

Located at Florence, on the L. E., A. & W. R. R. Operated by the Witch Hazel Coal Co., Youngstown, Ohio. George W. Evans, Florencedale, Ohio, superintendent and mine foreman. Drift, No. 8 seam, 5 feet thick. Fan ventilation, motor and mule haulage, machine and pick mining. Employs 74 miners and 25 day men. Visited August 6th. Found third west entry in dangerous condition; ordered it stopped, which was done. December 2nd, mine in good condition.

Wabash.

Located at Parlett, on Wabash R. R. Operated by Wabash Coal Co., Cleveland, Ohio. W. P. Bates, Parlett, Ohio, superintendent; John Szuco, same place, mine foreman. Slope opening to No. 8 seam, 5 feet thick. Fan ventilation, mule haulage, machine mining. Employs 53 miners and 21 day men. Visited August 7th and October 23rd. Found in good condition on both occasions.

Zerbe.

Located at Amsterdam, on L. E., A. & W. R. R. Operated by the Ohio and Pennsylvania Coal Co., Cleveland, Ohio. George Wagoner, Amsterdam, Ohio, superintendent; John Wolf was mine foreman, but resigned December 15th, and was succeeded by John Lees, Amsterdam, Ohio. Shaft 185 feet deep to No. 5 seam, about 5 feet thick at this point. Ventilated by 20-foot Brazil fan. Mule and motor haulage, machine mining. One hundred and eighty-five miners and 58 day men employed. On visiting this mine near the close of the year found that they were out of material for building stoppings, and ventilation being neglected. Their attention was immediately called to this fact, as well as some other needed improvements. Immediate steps were taken to secure material for the purpose of making these improvements. Returning 15 days later, found that considerable progress had been made. Seven visits made during the year, and with the exception of the inspection already detailed, conditions were very satisfactory.

X. L.

Located at Bergholz, on the L. E., A. & W. R. R. Operated by the Bergholz Coal and Electric Light Co., Bergholz, Ohio. John McKeever, Bergholz, superintendent; John Peterson, same place, mine boss. Slope, No. 6 seam, 3 feet thick, fan ventilation, motor and mule haulage. Machine mining. Eighty-four miners and 25 day men employed. As the ventilation was not up to the requirements, requested that an additional fan be installed to act as a booster. This was done and ventilation made satisfactory. Visited four times.

Elizabeth.

Located two miles north of Amsterdam. Transportation, L. E., A. & W. R. R. Operated by Wolf Run Coal Co., Cleveland, Ohio. Val Cox, Wolf Run

superintendent; James Campbell, same place, mine boss. Shaft, 293 feet deep to No. 5 seam, 4 feet 8 inches thick at this point. Ventilated by 14-foot Capell fan. Motor haulage, machine mining. One hundred and fifty-four miners and 57 day men employed. Considerable trouble was encountered at this mine during the year on account of defects in the hoisting equipments, but by suggestions from this department, and through the advice of expert machinists who were called in to examine the machinery, these defects were overcome by making needed changes, adding new parts where defective, and improving everything in connection with the hoisting machinery, so that the men can be lowered and hoisted with reasonable safety. Two mine fires originated during the year, necessitating their sealing off before they could be extinguished. Ten visits were made during the year. As this mine generates considerable gas, it was necessary to require especial care in order to avoid accidents. June 16th, Martin Cordovan was arrested, tried and fined for going beyond a danger signal.

Dillon No. 2.

Located at Dillonvale, on W. & L. E. R. R. Operated by W. & L. E. Coal Co., Cleveland, Ohio. Fred Hornickel, Dillonvale, Ohio, superintendent; Amos Manteau, same place, mine foreman. Drift, No. 8 seam, 5 feet thick. Motor and mule haulage, machine mining, fan ventilation. Employs 305 miners and 73 day men. The ventilation of this mine had reached the limitations required by law for some time, but during the present year two additional 7-foot Stine fans were installed to assist the 18-foot Brazil fan, putting the mine in first-class condition. Suspended in October, remaining so until close of year.

Dillon No. 4.

Located at Herrick, on W. & L. E. R. R. Under same management as No. 2. James Martin was mine boss, but resigned in August, and was succeeded by William Nichols, Herrick, Ohio. Visited February 21st; haulway in bad condition on account of poor drainage and insufficient timbering. July 3rd, haulways being timbered, but still muddy. September 17th, operations suspended, but work of repairing haulways being continued. Mine still closed at end of year.

Connor No. 1.

Located at Connors, on W. & L. E. R. R. Operated by W. & L. E. Coal Mining Co., Cleveland, Ohio. Fred Hornickel, Dillonvale, Ohio, superintendent; Fred Aspenwall, Connors, assistant superintendent; S. W. Ruckman, same place, mine boss. Drift, No. 8 seam, 5 feet thick. Fan ventilation, motor and mule haulage. Machine mining. Seventy-five miners and 28 day men employed. Visited August 26th. Found escapement way almost closed. Thirty days were given to put the mine in lawful condition. September 25th, found escapement way in first-class condition, and conditions favorable.

Connor No. 2.

Coal dumped over same tipple as No. 1. J. B. Ruckman, Connors, Ohio, mine boss. One hundred and forty-three miners and 38 day men employed. Visited

August 25th. Ordered north side opening cleaned out and new opening made on south side. December 1st, north opening cleaned out and new opening completed on south, making good available escapement ways on both sides of the mine, putting mine in satisfactory condition.

Portland.

Located at Connors Station, on W. & L. E. R. R. Operated by the Rayland Coal Co., Pittsburg, Pa. C. A. Miller, Rayland, Ohio, superintendent; J. E. Barth, same place, mine boss. Drift, No. 8 seam, 5 feet thick. Motor and mule haulage. Fan ventilation, machine mining. Eighty-one miners and 26 day men employed. Visited August 27th. Found in good condition. Suspended last three months of the year.

West Pittsburg.

Located two miles southeast of Bergholz, on L. E. A. & W. R. R. Operated by the Rice Coal Co., Cleveland Ohio. Richard Roush, Bergholz, Ohio, superintendent; Evan Griffith, same place, mine boss. Slope, No. 5 seam, 5 feet thick. Motor and mule haulage. Ventilated by 15-foot Brazil fan. Machine mining. One hundred and eighty miners and 50 day men employed. Five visits made to this mine, and it was generally found in good condition.

Amsterdam.

Located at Amsterdam on L. E. A. & W. R. R. Operated by Y. & O. Coal Co., Cleveland, Ohio. Richard Jones, Amsterdam, Ohio, superintendent; Edward Lee, same place, mine foreman. Shaft, 276 feet deep, No. 5 seam, 4½ feet thick. Ventilated by 14-foot Robinson fan. Motor and mule haulage, machine mining. One hundred and twenty miners and 60 day men employed. Visited March 14th. Mine idle, conditions satisfactory. June 5th, mine still idle and in bad condition on account of the air courses and haulageways having fallen in, checking the ventilating current, thus allowing great quantities of gas to accumulate throughout the old workings. Orders given not to resume operations until the air courses were opened out, ventilation increased and conditions approved by the Department. June 15th, standing gas removed, ventilation increased and permission given to start six pairs of entries and the rooms on same. Requested that they continue improving conditions, and build brick or tile stoppings. September 3rd and 4th, orders of previous visit complied with; conditions steadily improving. Requested that ventilation be increased on north side. November 13th, ventilation good throughout the mine; haulways being timbered with steel eyebeams, and mine in as good condition as circumstances would permit.

Dunglen.

Located at Dunglen, on W. & L. E. R. R. Operated by Morris-Poston Co., Cleveland, Ohio. Chas. Thompson, Mt. Pleasant, Ohio, superintendent

No. 8 seam, 5 feet thick, motor haulage, machine mining. Three openings and coal all dumped over same tipple.

No. 1—(Opening).

Visited January 21st. Conditions satisfactory. July 2nd, orders given to timber 14th east entry and clean out 4th west aircourse. October 14th, requested that main entry be timbered and ordered trolley wires changed to comply with law. November 24th, wire being changed as ordered, and preparations being made to raise track on main entry and same timbered. Employs 160 miners and 29 day men. Wm. Weekley, Dunglen, Ohio, mine foreman.

No. 2—(Opening).

Elmer Lyon, mine foreman. One hundred and forty miners and 33 day men employed. Visited three times. Ordered trolley wire changed to comply with the law. On last visit this order being complied with, and mine in good condition.

No. 3—(Opening).

Elmer Lyon, mine foreman. Forty-four miners and 8 day men employed. Visited twice during the year and not found in best condition.

Roby No. 2—Drifts 3, 4 and 5.

Located at Ramsey, on W. & L. E. R. R. Operated by Roby Coal Co., Deland, Ohio. Wm. Moke, Adena, Ohio, superintendent; Geo. Chamberlain, Ramsey, Ohio, assistant superintendent. Drift openings. Coal all dumped over one tipple. No. 8 seam, 5 feet thick, motor and mule haulage. Fan ventilation, machine mining.

Drift No. 3.

John Eagan, mine foreman. Employs 90 miners and 21 day men. Visited three times. March 24th, ventilation unsatisfactory. Requested that this be remedied at once. Request complied with and next visit mine was found in excellent condition. October 27th, found operations had been suspended at these mines, remaining so until close of year.

Drift No. 4.

Louis Murdock, Ramsey, Ohio, mine boss. One hundred and forty-eight miners and 38 day men employed. Visited March 25th and July 23rd. On occasions found mine in excellent condition.

Drift No. 5.

John Ostroski, Ramsey, Ohio, mine foreman. Visited March 24th. Ventilation unsatisfactory. Requested that steps be taken to improve it.

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 July 22nd, ventilation greatly improved. October 29th, only a few men employed driving entries. Mine in good condition.

Diamond.

Located two miles west of Yellow Creek, on C. & P. R. R. Operated by W. E. Smith, Wellsville, Ohio. John Close, same place, mine foreman. Slope, No. 3 seam, $3\frac{1}{2}$ feet thick. Fan ventilation, mule haulage, machine mining. Employs 16 miners and 6 day men. Visited February 12th, July 10th, November 17th, and found in fair condition.

Creek Vein No. 3.

Located at Irondale. Operated by East Ohio Sewer Pipe Co., Irondale, Ohio. W. E. Williams, same place, is superintendent and mine foreman. Drift, No. 3 seam, $3\frac{1}{2}$ feet thick. Pick mining, mule haulage, natural ventilation. Six miners and 1 day man employed. Visited February 14th and November 18th. Ventilation unsatisfactory. On last visit requested that fan be installed.

East Ohio No. 6.

Located at Irondale. Operated by East Ohio Sewer Pipe Co., Irondale, Ohio. W. E. Williams, same place, has charge. Drift, No. 6 seam, 4 feet thick. Fan ventilation, mule haulage, machine mining. Employs 8 miners and 4 day men. Visited July 9th and November 18th; found in poor condition. Coal very irregular and faulty, and probabilities are that mine will be abandoned in near future.

Edgar Mines.

Located two miles east of Dillonvale, on W. & L. E. R. R. Operated by Glens Run Coal Co., Cleveland, Ohio. C. W. Maurer, Dillonvale, Ohio, superintendent. Drift mines. No. 8 seam, 5 feet thick. Machine mining, motor and mule haulage, fan ventilation. One tippie is used to dump the product of both mines. Robert Nicholson, Dillonvale, Ohio, mine foreman.

Edgar No. 1.

Employs 105 miners and 30 day men. Visited July 1st. Ventilation unsatisfactory. Ordered aircourse cleaned. September 15th, work of cleaning aircourse progressing, but ventilation still unsatisfactory. December 9th, aircourse cleaned, ventilation improved a little. Suggested that an opening be made somewhere near the head of the workings and air taken in at that point, and ordered some timbering done on several of the entries.

Edgar No. 2.

Employs 162 miners and 35 day men. Visited July 1st. Orders given to stop 9th west entry until it was properly timbered; also to timber 16, 17 and

18 west entries, and suggested some changes in the system of ventilation. December 11th, ventilation and general condition of the mine improved. Suggested that an airshaft be sunk near 7th west entry.

Jefferson Coal Co. Mines.

Nos. 1 and 2 located at Piney Fork. Nos. 3 and 4 at Harpersville, all on the L. E., A. & W. R. R. John Simpson, Piney Fork, Ohio, is general manager. Wm. Simpson, same place, superintendent of Nos. 1 and 2; Wm. Wilson, Harpersville, Ohio, of Nos. 3 and 4. Drift opening, No. 8 seam, 5 feet thick. Each mine is equipped with a 15-foot Brazil fan. Machine mining, motor and mule haulage.

Jefferson No. 1.

Employs 189 miners and 36 day men. H. D. Albaugh, Piney Fork, Ohio, mine foreman. Visited August 4th. Mine not in satisfactory condition on account of haulways not being properly timbered. October 14th, main west entry not timbered satisfactorily. Balance of mine in fair condition.

Jefferson No. 2.

Employs 200 miners and 42 day men. Thos. Ivers, Piney Fork, mine foreman. Visited August 4th, and with exception of muddy haulways in some parts of the mine, conditions were good. October 13th, several additional openings made at head of the workings, and ventilation good. Brick stoppings being built, as requested by the department.

Jefferson No. 3.

Employs 134 miners and 37 day men. Otis Jacoby, Harpersville, Ohio, mine foreman. Visited August 5th and December 11th. Operations of this mine suspended April 1st and resumed December 1st. This is one of the best mines in the district. It is well laid out, both in regard to ventilation and haulage; has a splendid roof and track, and is kept in the very best of condition.

Jefferson No. 4.

Employs 60 miners and 25 day men. Visited August 5th and November 1st. Found in excellent condition on both occasions. This mine is laid out similar to No. 3, both in regard to ventilation and haulage. Mine is fully equipped and ready to produce a large tonnage, but owing to lack of orders was suspended December 1st.

United States Mines.

Located at Bradley, on W. & L. E. and L. E., A. & W. R. R.'s. Operated by United States Coal Co., Cleveland, Ohio. Wm. Wagoner, Bradley, Ohio, superintendent. Drift opening, No. 8 seam, 5 feet thick. Motor and mule haul-

age, machine mining. Ventilated by 7-foot Stine fans. All of these mines have a very tender roof, making it necessary to use great quantities of timber, especially on the entries and room necks, to keep the mines in proper condition.

U. S. Section No. 1.

Employs 150 miners and 38 day men. Reese Chamberlain, Bradley, Ohio, mine foreman. Visited July 28th. Ventilation very bad and several entries in bad condition, owing to not being properly timbered. August 5th, investigated fatal accident. October 20th, new opening made and fan installed. Ventilation excellent and timbering done as requested. General condition of mine greatly improved.

U. S. Section No. 2.

Employs 100 miners and 36 day men. Wm. Adamson, Bradley, Ohio, mine foreman. Visited July 29th, August 20th and October 21st, and on each occasion mine was found in good condition. Haulways clean and well timbered.

U. S. Section No. 3.

Employs 115 miners and 37 day men. David Jack, Bradley, Ohio, mine foreman. Visited July 31st and October 31st. This mine was exceptionally well timbered and fairly well ventilated.

U. S. Section No. 4.

Employs 118 miners and 35 day men, Lawrence Gardner, Bradley, Ohio, mine foreman. Visited July 30th. Found ventilation very satisfactory, but several entries in bad condition because of not being properly timbered. October 22nd, timbering done as requested, and conditions favorable.

Mt. Pleasant.

Located at Mt. Pleasant. Operated by Frank Snyder, same place. Domestic mine. Drift, No. 8 seam, 5 feet thick. Furnace ventilation, mule haulage. Pick mining. Employs 7 miners and 2 day men. Visited October 12th. Found in good condition.

Nicholson.

Located at Dillonvale, Ohio. Operated by P. R. Nicholson, Dillonvale, Ohio. Domestic mine, drift, No. 8 seam, 5 feet thick. Furnace ventilation, mule haulage. Pick mining. Visited October 28th and found in good condition.

CLAY MINES—(Jefferson County).

East Ohio.

Located at Irondale, on C. & P. R. R. Operated by East Ohio Sewer Pipe Co., Irondale, Ohio. W. E. Williams, same place, superintendent and mine

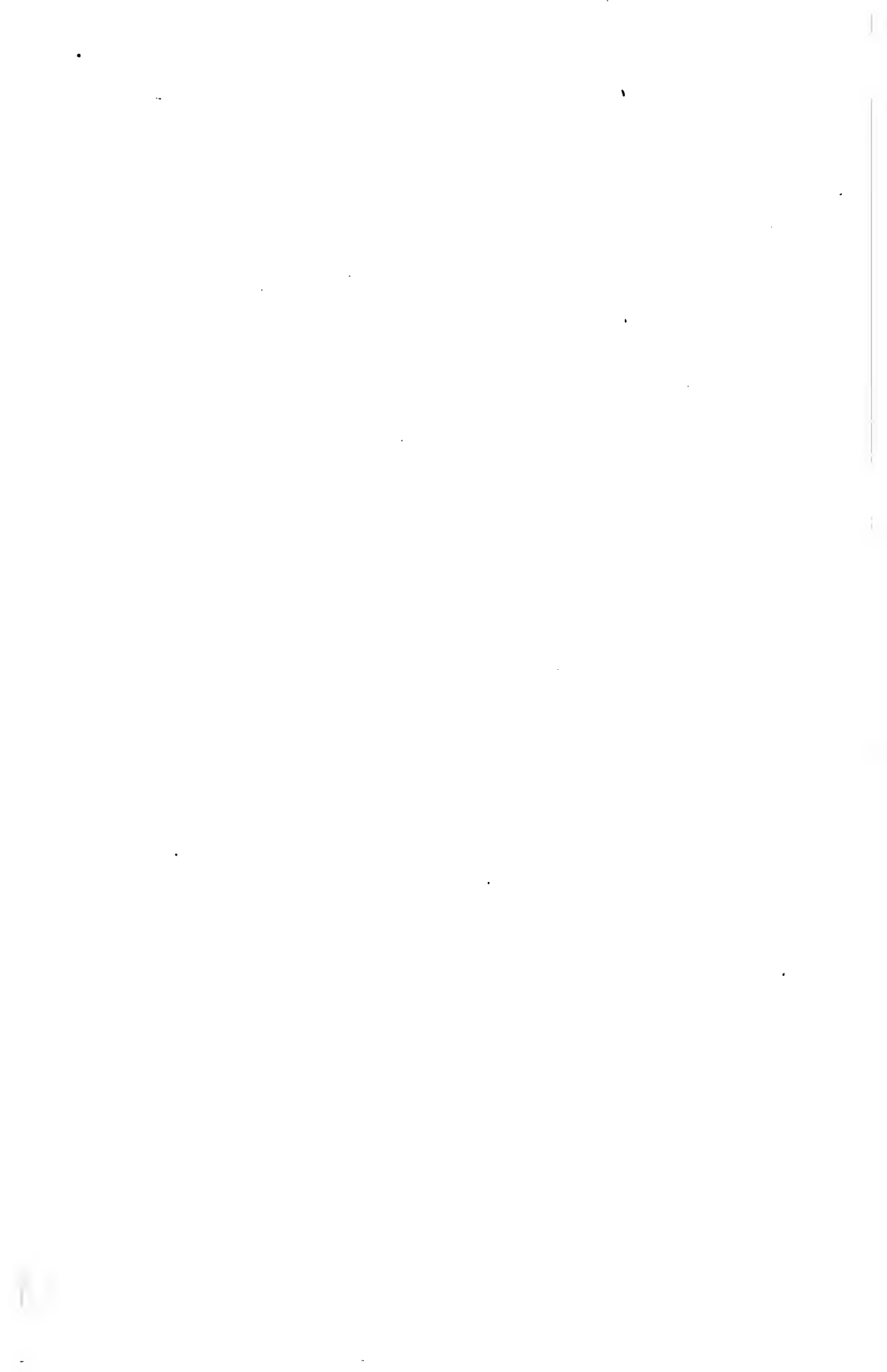
boss. Shaft, 67 feet deep to No. 1 seam of clay, 17 feet thick. Fan ventilation, mule haulage. Visited February 14th, July 9th and November 18th, and always found in good condition. Employs 9 miners and 5 day men.

Standard.

Located at Irondale, on C. & P. R. R. Operated by Standard Fire Brick Co., Pittsburg, Pa. L. N. McDanlis, Irondale, Ohio, superintendent and mine boss. Drift to No. 3 seam of clay, 9 feet thick. Fan ventilation, mule haulage. Six miners and 1 day man employed. Three visits made during the year, and during that time a second opening was made and an 8-foot home-made fan installed. Mine placed in excellent condition.

Dando.

Located at Hammondsville, on C. & P. R. R. Operated by Irondale Fire Brick Co., Irondale, Ohio. Fred Dando, same place, superintendent; Edward Grimes, Vanport, Pa., mine foreman. Slope No. 3 seam of clay, 10 feet thick. Fan ventilation, mule haulage. Employs 6 miners and 4 day men. Visited September 22nd. Found in splendid condition.



FOURTH DISTRICT

EBENEZER JONES

OM JANUARY 1ST TO JUNE 1ST. COMPOSED OF THE COUNTIES OF
MONROE, BELMONT, AND A PORTION OF JEFFERSON.

JUNE 1ST CHANGED TO

TENTH DISTRICT

COMPOSED OF A PORTION OF BELMONT AND A PORTION OF
JEFFERSON COUNTIES.

Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio:

Dear Sir:—In compliance with the Ohio mining law, and in accordance with the custom of the Department, I herewith submit to you my annual report as Inspector of the 4th and 10th inspection districts for the year 1908.

The 4th district was formerly composed of the counties of Monroe, Belmont and a portion of Jefferson and Columbiana. The 77th General Assembly enacted a law providing for three additional district mine inspectors. This necessitated the rearrangement of the inspection districts, taking effect June 1st, 1908. I was on this date assigned to the 10th district, which is composed of a portion of Belmont and Jefferson counties.

With few exceptions, the coal mines in these districts have been very much affected by the industrial depression existing the past year. When the statistics for the coal production for the year 1908 are compiled, it will no doubt show a material decrease in the districts covered by this report as compared with that of 1907.

It is a matter of regret that this report shows no decrease in the number of fatalities for the 4th district for the six months of the year. From January 1st, 24 fatal accidents occurred, and for the 10th district, from June 1st to the close of the year, 4 fatal accidents occurred.

In the 4th district 17 persons were fatally injured by fall of soapstone, 6 by mine cars and 1 by electric wires. In the 10th district 2 fatal accidents were due to falls of upper roof, 1 to fall of soapstone and 1 to mining machine. It will be shown here that there was a total of 28 fatal accidents in both districts during the time I had charge of the work of inspection.

During the year a large number of serious but non-fatal accidents have occurred in the mines under my supervision. The principal cause of the fatal and non-fatal accidents is the dangers surrounding the occupation of mining. To a close observer it must be apparent, and I am fully convinced that a large number of the accidents in mines can be attributed to the fact that many of the men employed have little knowledge of mining and the dangers surrounding their occupation. In addition to this, practical and experienced miners, accustomed to danger, at times take risks that end in their being injured, and in a number of instances fatally.

The occupation of the miner is a hazardous one at all times, and he should be constantly reminded that by his own efforts he can be helpful in reducing the number of accidents occurring in the mines.

For the period covered by this report 34 permanent improvements were made at the mines, consisting of 8 fans, 8 airshafts, 17 second openings or escapementways, and one furnace. A number of minor improvements have been made throughout the district which are not classed as permanent.

The electric wiring of the mines of the district has been much improved during the year, but considerable improvement yet remains to be accomplished.

A number of substantial stoppings have been built during the year, resulting in an increased volume of air in the interior workings of the mines.

Your order relating to the loading of bug dust is being generally complied with throughout the district. The law requiring the use of copper needles and copper-tipped tampers is being gradually observed. This is also true of the law requiring that shields be placed on mining machines.

The drilling and operation of oil and gas wells in coal territory is a serious question both to miner and operator. To the miner, because of additional danger to his life, due to gases that are encountered in the development of the mine. It is menace to the operator because of the danger to his property.

A system should be adopted whereby the location of wells would always be known and a record of them kept. Stringent laws should be enacted for the regulation of casing, plugging and location of oil and gas wells.

At the close of the year the mines in this district are in fair condition. The new year should bring forth renewed efforts on the part of all concerned to secure for the future better conditions than ever before. In this connection it may be well to state that all precautions for safety do not devolve alone upon the mine management or mining department; much depends upon each individual employed, as well as upon the mine manager, in looking after the personal safety of those engaged in mining.

A spirit of co-operation between employer and employe should be cultivated to reduce to the minimum mine accidents.

In conclusion, I desire to call attention to the list of visits made to the mines and other districts during the year, and take this opportunity of thanking yourself and my official associates for courtesies extended during the year.

Very respectfully yours,

EBENEZER JONES, Martins Ferry, Ohio,

December 31, 1908.

Inspector 10th District.

Note—When not otherwise stated, it will be understood that the No. 8 seam is the seam worked and will average about 5 feet in thickness. All mines are machine mines, with fan ventilation, unless otherwise specified.

BELMONT COUNTY.

Wheeling Creek Nos. 1 and 2.

Owned and operated by the Lorain Coal and Dock Co., Cleveland, Ohio. Mines located west of Bridgeport, on C., L. & W. R. R. Mr. J. E. Waters, is superintendent; Mr. Gilbert Hanson, mine boss, both of Bridgeport, Ohio. Drift. Coal from both openings is delivered to the same tippie. Mine found in good condition. March 26th, investigated fatal accident to Martin Sloutz, injured March 17th by fall of soapstone, and died March 23rd as a result of his injuries. May 15th, investigated fatal accident to Joseph Farnick, who was killed May 14th while sitting at the junction of two entries. A driver was coming in with empty cars. Front car jumped the track and knocked out a post, which struck the unfortunate victim on the head and killed him. Mine employs 330 miners and 95 day men.

Lansing.

Owned and operated by same company as Wheeling Creek mines. Mr. Jas. Johnson, Bridgeport, Ohio, superintendent; Mr. Wm. Slater, Blaine, O., mine foreman. Mine located at Lansing, on C., L. & W. R. R. March 27th, investigated fatal accident to John Burke, who was killed by fall of soapstone March 24th. Again visited April 29th and in good condition. On August 19th, visited in company with the Mining Commission, also District Inspectors Turner, Morrison and Jenkins. Mine employs 317 miners and 70 day men.

Crescent.

Owned and operated by the same company as Wheeling Creek and Lansing mines. Transportation, C., L. & W. R. R. Mr. Jas. Birbeck, Bridgeport, superintendent. Mines located at Crescent, Ohio.

Crescent No. 2½.

Visited this mine June 17th, in company with Mr. Lot Jenkins, the newly appointed inspector for that district. Found in fair condition, with exception of ventilation. Management agreed to place their fan in a new location and make ventilation satisfactory. Mine employs 165 miners and 40 day men. Mr. Embelton, Blaine, Ohio, mine foreman.

Crescent No. 3.

Located at Crescent, on C., L. & W. R. R. Mr. William Redfern, mine foreman. Mine employs 95 miners and 34 day men. March 15th, investigated fatal accident to Steve Bologe, who was killed by fall of soapstone March 14th. Mine in good condition. A large amount of work had been done since my former visit. Motor road was cleaned, manholes cleaned and additional ones made and whitewashed. Wiring had also been rearranged.

Crescent No. 4.

Richard Dellbridge, Maynard, Ohio, mine foreman. Visited June 17th, in company with Mr. Lot Jenkins. Mine found in fair condition. Employs 50 miners and 10 day men.

All of the Lorain Coal and Dock Co.'s mines are among the best regulated mines in this district, the company employing a special inspector, whose duty it is to look after the safety of the persons employed in the mines of this company, and also to see that the mining laws of the state are complied with. Great credit is due this company and its management, which includes the mine foremen and mine superintendents, as well as the general manager, for precautions taken to avoid fatal and serious accidents to their employes. Through their vigilance they no doubt have prevented a number of accidents. All mines of this company reported here are drift openings.

Y. & O. Mines.

Owned and operated by the Y. & O. Coal Co., Cleveland, Ohio.

Florence.

Located $1\frac{1}{2}$ miles west of Martins Ferry, Ohio. Transportation, C. & P. R. R. Two hundred and ninety-two miners and 65 day men employed. Mr. H. Sharp, superintendent; Wilfred Sowden, mine foreman, both of Martins Ferry, Ohio. Early in the year the 6-foot fan at this mine was replaced by a 12-foot fan, also a 7-foot fan being installed on the east side. With these improvements, ventilation was improved to a satisfactory standard. January 11th, investigated fatal accident to John Ardulon, killed by fall of soapstone January 8th. Visited August 20th, in company with the Mining Commission, and found in good condition. Six visits made during the year. At the close of the year mine was in good condition, with exception of a small territory on the east side, which is almost exhausted. Drift opening.

Barton.

Located at Barton, on the C., L. & W. R. R. Employs 213 miners and 68 day men. February 7th, ventilation fair; 11 and 12 R entries on 5 face condemned on account of broken roof. February 17th, investigated fatal accident to H. G. Duvall, mine foreman, who was electrocuted by coming in contact with trolley wire. March 30th, investigated fatal accident to John Coprel, who was injured by fall of soapstone March 13th, and died March 16th. Considerable improvement has been made in this mine during the early part of the year by timbering, making manholes and rearranging wiring. Mine in fair condition when last visited. W. A. Williams, superintendent; Mat Anderson, mine foreman, both of Barton, Ohio. Drift opening.

Maple Hill.

Located at Barton, on the C., L. & W. R. R. Visited March 30th and April 27th. Advised additional manholes made along motor road and ordered old works bratticed off so as to prevent black damp escaping into workings. Otherwise mine in fair condition. W. A. Williams, superintendent; Joseph Bainbridge, mine foreman, both of Barton. One hundred and fifty-four miners and 28 day men employed. Drift opening.

Boggs.

Located near Barton on the C., L. & W. R. R. W. A. Williams, superintendent; P. J. Leonard, mine boss, both of Barton. Thirty-eight miners and twenty day men employed. Ventilation deficient on this visit due to the air-

course falling in. One and 2 right entries were about to be connected with workings ahead of them, which, when completed will make ventilation satisfactory. Ordered timbering done, manholes provided and drainage completed. Drift opening.

Taggarts.

Situated near Barton, on C., L. & W. R. R. Owned and operated by the Barton Coal Co., Cleveland, Ohio. George Green, superintendent; Jabez Goulding, mine boss, both of Barton. One hundred and two miners and 28 day men employed. Mine in good condition, except wiring and manholes along motor road, which were ordered placed in lawful condition. February 12th, investigated fatal accident to Antal Pafi, who was killed by fall of soapstone February 10th. Drift opening.

Provident.

Located between St. Clairsville and Maynard, on W. & L. E. R. R. Owned and operated by the Provident Coal Co., Cleveland, Ohio. Shaft, 86 feet deep. David Thomas, St. Clairsville, superintendent; Wm. Liggins, same place, mine boss. Three hundred and two miners and 60 day men employed. Visited three times during the early part of the year. On June 19th, visited the mine in company with Mr. Lot Jenkins, the newly appointed inspector. The management had spent considerable time and money in rearranging the wiring in order to comply with the requirements of the Department in this respect, and as a result wiring was in good condition. With exception of additional manholes to be made along the motor road, mine was in good condition.

Lorena.

Situated between St. Clairsville and Maynard, on a branch of the W. & L. E. R. R. Owned and operated by Roby-Somers Coal Co., Cleveland, Ohio. J. S. Somers, St. Clairsville, superintendent; B. H. Beatty, same place, mine foreman. Drift opening. Employs 103 miners and 19 day men. May 8th, investigated fatal accident to Joseph Leon, who was squeezed between cars and rib May 1st, and died as a result of his injuries May 6th. Mine in fair condition.

Lydia.

Located near Maynard, on C., L. & W. R. R. Owned and operated by the Purseglove Coal Mining Co., St. Clairsville. Samuel Purseglove, superintendent and mine boss, St. Clairsville. Drift opening. Employs 147 miners and 23 day men. Ventilation was found deficient in a part of this mine. Requested this portion of the mine suspended until ventilation was furnished as required by law, which the management agreed to do.

Troll No. 1.

Located near Maynard, on a branch of the W. & L. E. R. R. Owned and operated by the Troll Coal Mining Co., St. Clairsville, Ohio. J. S. Troll, St. Clairsville, superintendent; John Dvorack, Maynard, mine boss. Drift opening. Employs 176 miners and 40 day men. When visited mine was found in fair condition.

Troll No. 2.

Located near No. 1. Owned and operated by the same company. Same superintendent; Geo. Findley, Maynard, Ohio, mine boss. Drift opening. Employs

163 miners and 32 day men. Mine in good condition except 3 and 4 R. entries, which I requested be abandoned on account of broken and dangerous roof, which was complied with.

Victor.

Located near Bannock, on C., L. & W. R. R. Owned and operated by Bannock Coal Co., Akron, Ohio. Geo. W. Selway, superintendent and mine boss. Shaft opening, 32 feet deep. Employs 20 miners and 9 day men. New mine. Ventilation deficient at face of workings on account of no door being placed at 1 and 2 west. Directed that a door be placed there at once, which was done. Tested scales and found them correct.

Wheeling Valley.

Located at Lafferty, on C., L. & W. R. R. Owned and operated by the Wheeling Valley Coal Co., Cleveland, Ohio. Jas Jordon, Lafferty, superintendent; Andy Arrott, same place, mine boss. Slope opening. Employs 70 miners and 21 day men. Mine in fair condition considering bad roof to contend with at this mine. Gathering locomotives are used here in some entries. Trolley wire was stretched across the room necks. Requested that all trolley wire on room entries be placed on opposite side from rooms, which has been complied with.

Tunnel.

Located at Flushing, on C., L. & W. R. R. Owned and operated by the Flushing Coal Co., Elyria, Ohio. J. A. Trim bath, Flushing, superintendent and mine boss. May 11th, mine in poor condition as to ventilation and drainage. As a result mine was closed until conditions were improved. May 16th, ventilation improved sufficiently to allow a portion of the mine to resume. Conditions to be improved generally throughout the mine. Drift opening. Employs 18 miners and 16 day men.

Kirkwood.

Located west of Bridgeport, on C., L. & W. R. R. Owned and operated by the Moores Run Coal Co., Fairmont, W. Va. J. J. Ross, Bridgeport, superintendent; Wm. Heller, same place, mine boss. Visited January 14th and found in fair condition. Tested scales and found them incorrect. Company sent a scale adjuster. Drift opening. Employs 208 miners and 60 day men.

Black Oak.

Located between Lafferty and Flushing, on C., L. & W. R. R. Owned and operated by the Kennon Coal Mining Co., Cleveland, Ohio. John Whalen, Cleveland, superintendent; Geo. Millward, Flushing, mine boss. May 14th, investigated fatal accident to Joseph Gruskell, who was killed by a fall of soapstone March 13th. Shaft opening. Employs 160 miners and 55 day men. Mine in fair condition.

Dellora.

Located at Glencoe, on B. & O. R. R. Owned and operated by the Highland Coal Co., Wheeling, W. Va. H. S. Reppert, superintendent, Glencoe, Ohio. Shaft opening. Employs 232 miners and 66 day men. On my first visit ventilation was found deficient on entries off of 2nd North. Requested management improve ventilation to requirements of law. On the following visit ventilation was satisfactory and mine in good condition. On March 25th, investigated fatal accident to John Toazk, who was killed by fall of soapstone. Mans along motor roads provided during the year.

Glen.

Located near Glencoe, on B. and O. R. R. Owned and operated by the Belmont Coal Mining Co., Pittsburg, Pa. John McMullen, Glencoe, superintendent. Slope opening. Employs 150 miners and 33 day men. March 24th, investigated fatal accident to Frank Malaki, who was killed by fall of soapstone March 20th. On same date investigated accident to Rudolph Bonacost, who was injured by fall of soapstone and died from effects of his injuries on April 30th. May 15th, investigated fatal accident to Otto Ault, who was killed on this date by cars running off down the slope. Ventilation good, drainage poor. Advised better drainage and additional improvements made along travelingway.

Black Diamond.

Located at Neffs, on the St. Clairsville branch of the B. & O. R. R. and Adena branch of the W. & L. E. R. R. Owned and operated by same company as Glen mine. E. H. Lace, superintendent, Neffs, Ohio; John Atkinson, same place, mine boss. Drift opening. Employs 222 miners and 60 day men. January 7th, insisted that the volume of air be increased to comply with the law. On the same date investigated fatal accident to Frank Andrews, who was killed by fall of soapstone January 6th. May 1st, mine in fair condition, but ventilation somewhat deficient, which was requested increased. Tested scales and found them unsatisfactory. Advised expert. October 21st, visited mine in company with the district inspector, Mr. Lot Jenkins, to investigate a small explosion of fire damp which was being forced out of the old works. After an inspection of the old works, we found the amount to be small, but precautions were taken to divert any that may hereafter escape from this section to the return airway. While in the mine a miner named Edward Johnson was injured by a fall of soapstone and died the same day from the effects of his injuries. Ventilation improved, but company agreed to have a new engine for their fan within a week, which should make conditions satisfactory, with other improvements being made.

O. & W. Va.

Located at Neffs, on B. & O. R. R. Owned by same company as Black Diamond and Glen mines. Same superintendent as Black Diamond; Michael O'Grady, Neffs, Ohio, mine boss. Drift opening, pick mine. Mine suspended during the year.

Neffs No. 1.

Located at Neffs, on B. & O. R. R. Owned and operated by the Pittsburg-Belmont Coal Co., Cleveland, Ohio. Franklin Neff, superintendent, Neffs, Ohio; John Crawford, Steel, Ohio, mine boss. Drift opening. Employs 153 miners and 47 day men. When visited, ventilation was found deficient in a large portion of this mine. Requested same improved to comply with the law at once. Advised installation of larger and better fan. Investigated fatal accident to John E. Patterson, a driver, who was squeezed between car and rib on January 24th, and died from his injuries January 26th.

Neffs No. 2.

Located at Neffs, on B. & O. R. R. and W. & L. E. R. R. Operated by the same company at Neff No. 1; same superintendent; J. W. Lovejoy, Steel, mine boss. Drift opening. Employs 50 miners and 11 day men. Mine in good condition, except ventilation, which was maintained by a furnace. Advised the installation of a fan.

Schicks.

Located west of Bellaire, on B. & O. R. R. Owned and operated by M. & J. Schick, Bellaire, Ohio. Martin Schick, Bellaire, superintendent; Ed Conway, Bellaire, mine boss. Drift opening. Employs 78 miners and 20 day men. When visited mine was found in good condition, with exception that wiring should be rearranged in some places in order to comply with the requirements of the Department.

Pultney.

Located south of Bellaire, on C. & P. R. R. Owned and operated by the Geo. M. Jones Co., Toledo, Ohio. Slope opening. Employs 252 miners and 58 day men. G. S. Jones, Bellaire, superintendent; Wm. Baring, same place, mine boss. Ventilation found deficient on 5 and 6 west. Gave orders that no further operations be permitted until ventilation is furnished as specified by law. A splendid piece of timbering is being done at the bottom of the slope, which will make this part of the mine much safer. Mine otherwise in fair condition. February 22nd, investigated fatal accident to Steve Tokey, who was killed by fall of soapstone February 20th. March 29th, investigated fatal accident to Emmitt Robb, who was killed by cars running back down the slope, which was due to the chain on the end of the rope breaking.

Clifford.

Located at Dillies Bottoms on C. & P. R. R. and Ohio River. Owned and operated by the Fort Pitt Coal Co., Pittsburg, Pa. A. G. Leonard, Moundsville, W. Va., superintendent; G. W. Dawson, same place, mine boss. Slope opening, employs 26 miners and 15 day men. This mine generates considerable fire damp. In good condition, a new 14-foot Robinson fan having been recently installed. A new air shaft and escapement-way is to be provided during the year. Mine was visited in company with Mr. Jenkins, the district inspector.

Empire No. 1.

Located at Bellaire on C. & P. R. R. Owned and operated by the Rail and River Coal Co., Bellaire, O. J. W. Crawford, superintendent, Bellaire, O.; H. W. Davis, same place, mine boss. Drift opening, employs 181 miners and 55 day men. Ventilation good, mine dusty. Gave orders to have dust loaded out and nine sprinkled, manholes to be provided along motor road and timbering done in main entry; also requested trolley wires just outside of pit mouth be raised.

Empire No. 2.

Owned and operated by same company as Empire No. 1. Mine is located south of Bellaire on C. & P. R. R. Same superintendent as No. 1 mine. Slope opening. Visited in company with district inspectors Jenkins, Turner and Morrison, to investigate condition of main haulway as to safety. After the inspection we advised timbering done and manholes provided along motor road.

Malleys.

Owned by the Bellaire Coal and Coke Co., Bellaire, O. Operated by Long Winder, Bellaire, O. Drift opening, employs 6 miners and 2 day men. Pick and shovel ventilation. Visited April 13th; conditions were such that mine was closed until law was complied with. The company then proceeded to drive

a new airway from other side of the hill to connect with the workings, which will make the ventilation satisfactory. Thos. Long, Bellaire, superintendant and mine boss.

Carnegie.

Located at Bellaire. Owned and operated by the Carnegie Steel Co., Bellaire, Ohio. Frank Marling, superintendent, Bellaire, O. Drift opening, employs 50 miners and 15 day men. Mine in excellent condition. On February 15th, investigated fatal accident to Bannie Sandwick, who was killed by fall of soapstone. August 22nd, visited mine in company with Mining Commission, District Inspectors Turner, Jenkins and Morrison and a number of other gentlemen. All expressed themselves as well pleased with the condition of the mine and the manner in which all were entertained.

Edgehill.

Located north of Bellaire on C. & P. R. R. Owned and operated by A. J. Morgan Coal Co., Bellaire, O. Drift opening, employs 40 miners and 6 day men. Furnace ventilation. A. J. Morgan, Bellaire, superintendent; Jacob Long, Shadyside, mine boss. Visited mine in company with Mr. Lot Jenkins, District Inspector. Ventilation was found deficient; directed that same be improved to a satisfactory standard, that manholes be provided along motor road and conditions improved generally. Advised installing a fan.

West Wheeling.

Located at West Wheeling on C. & P. R. R. Owned and operated by the West Wheeling Coal Co., Bellaire, Ohio. Wm. Johnson, West Wheeling, superintendent and mine boss. Drift opening, employs 31 miners and 8 day men. June 18th, visited in company with District Inspector Jenkins to investigate fatal accident to Luigi Marcall, who was electrocuted by becoming entangled in the machine wires, due to a collision of cars, knocking post out which supported wires. New air-way and escapement-way made during the year. Mine in fair condition.

Aetna-Standard.

Located at Martins Ferry. Owned and operated by the American Sheet and Tin Plate Co., Martins Ferry, Ohio. Employs 50 miners and 15 day men. Drift opening, furnace ventilation. Mine in good condition. Wm. Fitzgerald, superintendent and mine boss.

Sheets.

Domestic mine, located at Martins Ferry. Owned by Mrs. Mary Sheets, Martins Ferry. Operated by Mr. Jas. Ralston, same place. Drift opening, employs 20 miners and 3 day men. Mine in good condition, considerable improvement having been made during the year; new fan installed to replace furnace ventilation; second opening made available and drainage provided. Jas. Ralston, superintendent and mine boss.

Laughlin.

Located at Martins Ferry. Owned and operated by the American Sheet and Tin Plate Co., Martins Ferry, O. Edward Hite, Martins Ferry, superintendent and mine boss. Drift opening, employs 60 miners and 13 day men. New second opening provided during the year, which can eventually be used as an inlet or outlet for air. Manholes provided along motor road during the year. Mine in good condition with the exception of a squeeze which gave some trouble during the latter part of the year, which is now settled.

Whitaker-Glessner.

Located at Martins Ferry. Owned and operated by the Whitaker-Glessner Co., Wheeling, W. Va. Harvey Casley, Wheeling, superintendent; Peter Malley, same place, mine boss. Drift opening, employs 18 miners and 7 day men. Mine in good condition; great improvements made during the year in this mine.

Gaylord No. 1.

Located north of Martins Ferry on C. & P. R. R. Owned and operated by Pittsburg & Cleveland Coal Co., Cleveland, Ohio. T. E. Sauters, Martins Ferry, superintendent; John Gallagher, same place, mine boss. Drift opening, employs 130 miners and 36 day men. Mine in fair condition; the motor road is somewhat difficult to keep in good repair for the reason that it runs through old works for a considerable distance; a large amount of timbering is necessary. Manholes provided during the year.

Gaylord No. 2.

Suspended all year.

SMALL MINES—(Belmont County).**Koehnline.**

Located at Bridgeport. Owned and operated by Koehnline Bros., Bridgeport, O. Seth Williams, same place, mine boss. Drift opening, employs 5 miners. Natural and compressed air ventilation. Advised making second opening more available as an escapement-way; also to better serve as an air-way. Domestic mine.

Hayne & Woods.

Domestic mine. Located near Martins Ferry. Owned and operated by Hayne & Woods, Martins Ferry. Lee Woods, superintendent and mine boss. Employs 3 miners, natural ventilation. Drift opening.

McGrail.

Located near Martins Ferry. Owned and operated by Miles McGrail, Martins Ferry. Drift opening, natural ventilation, employs 3 miners.

JEFFERSON COUNTY.

Walnut Hill Nos. 1 and 2.

Located at Yorkville on the C. & P. R. R. Owned and operated by the O. & P. Coal Co., Cleveland, Ohio. Wm. Neath, Yorkville, superintendent; Abel Armitage, same place, mine boss. Drift opening, employs 134 miners and 46 day men. Mine in fair condition, considering conditions to be contended with. On my last visit a decided improvement was noticed in the condition of the main haulway in No. 1 mine, due principally to a large amount of timbering having been done. Ventilation is somewhat deficient in No. 1 mine, but should be satisfactory when entry, which is now being double shifted, will be driven to the outside.

Russell.

Located at Tiltonville on C. & P. R. R. Owned and operated by the Russell Coal Co., Cleveland, O. Geo. McKittrick, Cleveland, superintendent; Seth Williams, Tiltonville, mine boss. Drift opening, employs 124 miners and 14 day men. New fan installed during the year and drainage improved. Mine in much better condition than last year. Mine in fair condition at close of the year.

Kelleys.

Located near Warrenton on C. & P. R. R. Owned and operated by the Shannon Coal Co., Warrenton, O. Drift opening, employs 39 miners and 21 day men. This is one of the old mines of the district and is difficult to keep in first-class condition, but considerable improvement has been made during the year in timbering haulage-way; also making manholes and cleaning motor road. Ventilation has been improved, but not to a satisfactory point. W. D. Roberts, Warrenton, superintendent and mine boss.

Rush Run No. 1.

Located at Rush Run on C. & P. R. R. Owned and operated by the Glens Run Coal Co., Cleveland, O. Howard Ulrick, Rayland, superintendent; John Cass, Rush Run, mine boss. Considerable trouble was experienced at this mine during the year on account of insufficient ventilation. As a consequence, the mine boss was directed to take the men out of the mine until the lawful amount of ventilation be provided. Manholes were ordered made and whitewashed. During the year a fan has been installed which makes ventilation satisfactory; manholes provided and whitewashed. Am pleased to report the mine now in good condition. During the year investigated two fatal accidents at this mine. Nick Brant, killed July 16th by fall of upper roof and roof coal, and Elijah Hennis, injured by mining machines December 11th and died of his injuries December 12th. Drift opening, employs 90 miners and 30 day men.

Rush Run No. 2.

Located at Rush Run on the C. & P. R. R. Owned and operated by same company as No. 1. Wm. Werker, Rayland, superintendent; Elmer Applegarth, Rush Run, mine boss. Drift opening, employs 116 miners and 25 day men. Mine in fair condition. June 4th, investigated fatal accident to Joseph Saregki, Hungarian, killed by fall of upper roof on main entry while making place for timbers. Considerable poor roof is encountered in this mine.

Rush Run No. 3.

Located near No. 2, owned and operated by the same company, same superintendent; Benj. Roberts, Rayland, mine boss. During the early part of the year ventilation was deficient. Requested ventilation improved at once. The fan was then moved to a more suitable place, which improved conditions. During the year an entry was driven to the outside, improving ventilation at close of year. Wiring was also rearranged during the year and a large number of manholes provided along the motor road. Drift opening, employs 75 miners and 22 day men.

Jean.

Located at Salt Run on C. & P. R. R. Owned and operated by the Blythe Coal Co., Pittsburg, Pa. George Vandyke, superintendent and mine boss, Brilliant, O. Drift opening, employs 38 miners and 10 day men. Mine in good condition.

Goucher.

Located west of Brilliant on C. & P. R. R. Owned and operated by the Dexter Coal Co., Brilliant, O. Wm. Patterson, superintendent and mine boss, who was succeeded during the year by John Barth, Rayland, O. Drift opening, employs 86 miners and 24 day men. July 28th, investigated fatal accident to John Patsko, who was killed by fall of soapstone July 27th. On my first visit to this mine in the year, which was on March 13th, found ventilation deficient. Directed the superintendent to remove the men from the mine and not to allow any further operation of the mine until the amount of ventilation was as required by law, which was complied with. Poor roof conditions make this a difficult mine to keep in first-class condition. Mine in fair condition at close of year.

La Grange.

Located at Brilliant. Owned and operated by the LaGrange Coal Co., Wheeling, W. Va. Jas. Morgan, Brilliant, superintendent and mine boss. Shaft opening, 265 feet deep to No. 6-A seam, which is $3\frac{1}{2}$ feet thick. Employs 10 miners and 9 day men. Mine in poor condition, due principally to previous methods of mining which were in vogue here years ago. This condition will exist until such time as a new and permanent air-way is driven around the old workings, which is recommended.

Portland.

Owned and operated by the Pittsburg-Buffalo Coal Co., Pittsburg, Pa. Located near Connorsville on W. & L. E. R. R. John Barth, Rayland, superintendent and mine boss. Drift opening; employs 75 miners and 23 day men. Mine in good condition.

Connor No. 1.

Located at Connorsville on W. & L. E. R. R. Owned and operated by the W. & L. E. Coal and Mining Co., Cleveland, O. Fred Aspinwall, Connorsville, superintendent; Samuel Ruckman, same place, mine boss. Requested more manholes provided along motor road and a new escapementway to be made. Drift opening; employs 63 miners and 30 day men.

Connor No. 2.

Located near No. 1, owned and operated by the same company as No. 1; same superintendent; James Ruckman, mine boss. Drift opening; employs 116 miners and 43 day men. Mine in fair condition. New escapement-way about completed. Fred Hornickle, Dillonvale, is general superintendent of mines of the W. & L. E. Coal and Mining Co.

Edgar No. 1.

Located about two miles east of Dillonvale on W. & L. E. R. R. Owned and operated by the Glen's Run Coal Co., Cleveland, O. Clyde Maurer, superintendent, Dillonvale; Robert Nicholson, same place, mine boss. Drift opening; employs 110 miners and 23 day men. Mine in fair condition, except 9 and 10 right entries, where ventilation was deficient. Requested same be improved at once.

Edgar No. 2.

Located near Edgar No. 1. Owned and operated by the same company; same superintendent and mine boss. Drift opening; employs 92 miners and 25 day men. Mine in fair condition, except ventilation, which was slightly deficient in a part of the mine, which was requested improved at once. Also timbering needed on 9 and 10 left.

Jefferson No. 1.

Located at Piney Fork on L. E., A. & W. R. R. Owned and operated by the Jefferson Coal Co., Cleveland, O. Wm. Simpson, Piney Fork, superintendent; David Pemberton, same place, mine boss. Drift opening; employs 216 miners and 42 day men. Mine in good condition.

Jefferson No. 2.

Located near No. 1. Owned and operated by same company. Same superintendent; Albert Thorp, Piney Fork, mine boss. Drift opening; employs 159 miners and 38 day men. Mine in excellent condition.

U. S. Mines at Bradley.

Section No. 1. Employs 135 miners and 36 day men. Ventilation during the early part of the year was unsatisfactory, but later a new opening was provided and new fan installed which made ventilation good. June 29th, investigated fatal accident to Andy Turplace and John Prosser, who were killed by fall of soapstone. Considerable bad roof is encountered in this section, which makes condition of mine poor.

U. S. Mine.

Section No. 3. Employs 142 miners and 36 day men. Rees Chamberlain, mine boss, Bradley, O. Ventilation was found deficient; ordered the number of men reduced until ventilation will be furnished as required by law. A new second opening has been provided during the year. Mine otherwise in fair condition.

U. S. Mine.

Section No. 4. Employs 130 miners and 33 day men. Lawrence Gardner, Bradley, mine boss. Considerable black damp was found in this mine; directed that same be securely sealed off so that it will not pollute the air current. March 2nd, investigated fatal accident to George Geregoek, killed by fall of soapstone February 29th. Mine in fair condition.

U. S. Mines Nos. 1 and 2.

Located at Plum Run. Employs 99 miners and 33 day men. James Briggs, Rhoadesdale, mine boss. Mines in fair condition, except drainage, which should be improved.

U. S. Mine No. 3.

Employs 103 miners and 32 day men. John Gray, Rhoadesdale, mine boss. January 29th, investigated fatal accident to John Good, killed by fall of soapstone. Ventilation deficient on this visit; ordered same improved at once, which was complied with. A new escapement-way provided during the year. Mine in fair condition at close of year.

U. S. Mine No. 4.

Employs 132 miners and 43 day men. Harry Kirkpatrick, Rhoadesdale, mine boss. Mine in fair condition except 3 and 4 right and south face entries, where ventilation was not satisfactory. The superintendent agreed to put down an air shaft for this portion of the mine. A new air shaft has been put down on the west side of the mine during the year.

The U. S. mines are located at Bradley and Plum Run; owned and operated by the United States Coal Co., Cleveland, Ohio. H. E. Willard, Cleveland, is general manager. William Wagner, Bradley, is superintendent of the Bradley mines, and Jos. H. Gray, Rhoadesdale, superintendent of the Plum Run mines. Transportation is furnished the Bradley mines by the W. & L. E. and L. E., A. & W. R. R., the C. & P. R. R. providing transportation for the Plum Run mines. All of the U. S. mines are drift openings.

La Belle.

Located at Steubenville. Owned and operated by the La Belle Iron Works, Steubenville, Ohio. P. J. Harrigan, superintendent; W. J. Lafferty, mine boss, both of Steubenville. Shaft opening, 200 feet deep to the No. 6-A seam of coal, 3½ feet thick. Employs 155 miners and 27 day men. Most of the tonnage at this mine is produced from the West Virginia side, as the mine crosses underneath the Ohio River. Visited May 19th and July 20th, in company with Mr. LaRue, of the West Virginia Department, and October 5th, in company with Mr. Thos. Morrison, of the Ninth District. Considerable drilling is being done in this territory for oil and gas, which has been a source of trouble and worry to the management as well as to the Department, owing to the dangers of encountering these wells in the operation of the mine. During the latter part of the year the oil field was well defined on either side of the river. Considerable improvement is being made at this mine. A new air-way is being driven around the old workings to intersect with the air shaft. The company is now working on an independent traveling road from the shaft bottom to the

inner workings. A new shaft is also to be put down on the West Virginia side to serve as an escapement-way. When these improvements are completed this mine will be in excellent condition. Mine in good condition at close of year.

High Shaft.

Located at Steubenville. Owned and operated by the Steubenville Coal and Mining Co., Steubenville, O. Wm. Smurthwaite, superintendent; Matthew Castner, mine boss, both of Steubenville. Shaft opening, 225 feet deep, No. 6-A seam of coal, $3\frac{1}{2}$ ' to 4 feet thick. Employs 15 miners and 9 day men. Ventilation was found deficient in a portion of this mine, which was ordered remedied at once. Also directed that fire boss make examination of mine before men were allowed to enter. Mine otherwise in fair condition.

Pratt.

Located between Mingo Junction and Steubenville. Owned and operated by Brettell Bros., Mingo Jct. Ted Brettell, superintendent. Domestic mine; employs 12 miners and 2 day men. Natural ventilation, condition fair. Pick mine, drift opening.

Ohio River.

Located at Empire on C. & P. R. R. Owned and operated by the Stratton Fire Clay Co., Empire, O. H. E. Stratton, superintendent, Empire; C. L. Vance, Port Homer, mine boss. Employs 10 miners and 2 day hands. August 28th, found ventilation poor. Directed the mine boss to remove all men from the mine until ventilation was provided according to law. Ordered second opening to be provided for air and escapement-way. September 9th, visited mine and found work was being done on the second opening. Mine resumed with 6 miners and 1 day man after an idleness of 12 days. Furnace ventilation, pick mine, drift opening.

Byers.

Located at Empire. Owned and operated by the Stratton Fire Clay Co., Empire, O. H. E. Stratton, superintendent; Wm. Byers, mine boss, Empire, O. Employs 19 miners and 4 day men. Furnace ventilation, pick mine. Ventilation found deficient; ordered same improved at once, which was done, but not to a satisfactory point. Recommended installation of a fan. This mine penetrates the No. 7 seam. Drift opening.

American Sewer Pipe Coal Mine.

Located at Freemans on C. & P. R. R. Owned and operated by the American Sewer Pipe Co., Toronto, O. Wm. Baxter, superintendent, Wellsville; James Sines, Empire, mine boss. Drift opening; employs 11 miners and 3 day men. Mine in fair condition.

Kaul-Oberkirch.

Located at Toronto. Owned and operated by Kaul-Oberkirch Co., Toronto. Geo. Myers, superintendent; Geo. Hamilton, mine boss, both of Toronto. Drift opening; employs 10 miners and 3 day men. Pick mine, natural ventilation. Ordered furnace built, also doors built to replace canvas.

Forest City.

Located at Toronto. Owned and operated by the American Sewer Pipe Co., Toronto. W. B. Francy, superintendent; John Ferguson, mine boss, both of Toronto. Drift opening, fan ventilation, pick mine; employs 15 miners and 7 day men. Mine in fair condition.

Speaks.

Located about two miles southwest of Steubenville. Owned by Henry Wilson, Steubenville; operated by Jas. Speaks, same place. Employs 13 miners and 1 day man. Ventilation poor; ordered that same be improved at once and drainage improved.

SMALL MINES—(Jefferson County).**Ohio Valley.**

Located at Toronto. Suspended all year. Owned by the American Sewer Pipe Co., Toronto, O.

Calumet.

Located at Toronto. Employs 7 miners and 3 day men. Condition fair. Owned and operated by the American Sewer Pipe Co.

Nicholsons.

Located at Empire. Suspended all year. Owned by Toronto Fire Clay Co., Toronto, O.

Great Northern.

Located at Empire. Two men employed. Condition fair. Owned and operated by Stratton Fire Clay Co., Empire, Ohio.

Williams.

Located two miles west of Steubenville. Employs 5 miners and 1 day man. Owned and operated by Albert Williams & Son, Steubenville. Mine in fair condition.

CLAY MINES—(Jefferson County).**Little Giant.**

Located at Toronto. Owned and operated by the Toronto Fire Clay Co., Toronto, O. Harry Nicholson, superintendent; A. S. Peckins, mine boss. Employs 15 miners and 13 day men. Fan ventilation. On September 16th requested that advance holes be drilled toward the old Jefferson Clay mine, where it is supposed a large body of water exists. On the 17th of September returned to see if request had been complied with and found former orders carried out. Arrangements were then made to drive a place toward the old

works to tap the water; holes to be drilled in advance in a number of directions until old workings are encountered. December 11th, visited this mine by request of the mine boss, as oil well had been drilled through the mine which had been abandoned and plugged, but gas was escaping into the mine. Orders were given to care for the escaping gas until we could get into communication with the well driller, which we later did; he agreeing to replug the well and make it safe by preventing the escape of gas into the mine, which was done without delay. Mine in fair condition. Shaft opening, 45 feet deep.

Forest City.

Located at Toronto. Owned and operated by the American Sewer Pipe Co. W. B. Francy, superintendent; James Milne, mine boss, both of Toronto, O. Slope opening; employs 10 miners and 7 day men. Fan ventilation, mine in fair condition.

Great Western.

Located at Toronto. Owned and operated by the American Sewer Pipe Co., Toronto, O. Daniel Hinkle, mine boss. Mine suspended all year.

Ohio Valley.

Located at Toronto, O. Owned by the American Sewer Pipe Co. Suspended all year.

Kaul-Oberkirch.

Located at Toronto. Owned and operated by Kaul-Oberkirch Co. Employs 7 miners and 4 day men. Slope opening, natural ventilation. Mine in good condition. Geo. Meyers, superintendent, Toronto; Jess Evans, mine boss, Steubenville.

Calumet.

Located at Toronto. Owned and operated by the American Sewer Pipe Co. Frank Hartford, superintendent; Geo. Glass, mine boss, both of Toronto, O. Slope opening; employs 10 miners and 8 day men. Exhaust steam ventilation. Ventilation poorly distributed around workings. It was necessary to give orders to have doors and brattices built.

American Sewer Pipe.

Located at Freemans. Owned and operated by the American Sewer Pipe Co. Wm. Baxter, Wellsville, superintendent; James Sines, Empire, mine boss. Drift opening; employs 8 miners and 5 day men. Ventilation poor. Orders given to keep fire in the furnace. Mine otherwise in fair condition.

Minor.

Located at Freemans. Owned and operated by the Minor Fire Brick Co., Empire, O. E. S. Minor, Empire, superintendent; Geo. Knelsley, Toronto, mine boss. Drift opening; employs 5 miners and 3 day men. Ventilation poor;

requested new air shaft put down and a furnace built, which was done. Mine otherwise in fair condition, although it has previously been badly affected by a squeeze.

Stratton.

Located at Empire. Owned and operated by the Stratton Fire Clay Co. H. E. Stratton, Empire, superintendent; Thomas Draa, mine boss, Empire, O. Drift opening; employs 6 miners and 4 day men. Natural ventilation. Ventilation poor, drainage also poor; orders given to have ventilation improved and to improve drainage.

Nicholson.

Located at Empire. Owned and operated by the Toronto Fire Clay Co., Toronto. Chas. Nixon, Empire, superintendent; Matthew Friend, Toronto, mine boss. Slope opening. New mine; employs 2 miners and 1 day man. New air shaft put down.

Great Northern.

Located at Empire. Owned and operated by the Stratton Fire Clay Co. H. E. Stratton, Empire, superintendent; Thos. Gilligan, Toronto, mine boss. Shaft opening, 40 feet deep. Employs 7 miners and 3 day men. Natural ventilation. Drainage poor; ordered same remedied.

Ohio River.

Located at Empire. Owned and operated by the Stratton Fire Clay Co. H. E. Stratton, Empire, superintendent; Wm. Wasley, Empire, mine boss. Shaft opening; employs 5 miners and 3 day men. Exhaust steam ventilation. Ventilation poor, drainage poor; directed that ventilation and drainage be improved so as to be in compliance with law.

Standard.

Located at Empire. Owned by Standard Fire Clay Co., Empire, O. Operated by Alex. Hays, same place. Slope opening; employs 13 miners and 7 day men. Natural ventilation. Recommended installation of fan. Mine in good condition.

MINES VISITED IN GUERNSEY COUNTY—FIFTH DISTRICT.

Cleveland No. 1.

August 4th, visited in company with W. H. Turner, the District Inspector. Mine is located at Senecaville on a branch of the B. & O. R. R. Owned and operated by the Morris Coal Co., Cleveland, O. Mark Coe, Senecaville, superintendent; Elvin Farris, same place, mine boss. Mine was found in good condition.

Hartford.

August 5th, visited in company with W. H. Turner, the District Inspector. This mine is located at Hartford on a branch of the B. & O. R. R. Owned and operated by the Cambridge Collieries Co. Chas. E. Haskins, superintendent; Otis Moss, mine boss, both of Buffalo, O. Mine found in fair condition.

Detroit.

August 6th, visited this mine at Ava, O., with the Mining Commission and W. H. Turner, the District Inspector.

Buckeye, Little Kate and Ideal.

August 7th, visited with the Mining Commission and W. H. Turner, District Inspector.

MINES VISITED IN HARRISON COUNTY.**Roby Mines.**

On August 20th, visited the Roby mines near Adena in company with the Mining Commission and District Inspectors Turner, Jenkins and Morrison. Also visited the Ramsey and Dungen mines on this date.

MINES VISITED IN HOCKING COUNTY.**Cawthorne No. 6.**

January 24th, visited the Cawthorne No. 6 mine of the New Pittsburg Coal Co., near Nelsonville. Mine was visited in company with Chief Inspector, Hon Geo. Harrison, and Mr. Jas. Pritchard and Mr. Thos. Morrison, District Inspectors of the third and sixth districts, respectively, the object of this visit being to consider the practicability, or otherwise, of working a portion of the mine which was overlaid with a very treacherous roof. After an inspection of the affected portion of the mine a report was submitted to the coal company, which is now a matter of record in the Chief Inspector's office at Columbus.

MINES VISITED IN STARK COUNTY.**Pocock.**

On May 12th, visited in company with Chief Inspector and District inspectors Turner, Miller and Morrison, the purpose of the visit being to determine, if possible, the danger due to a large body of water in an adjacent abandoned mine. After an inspection of the mine and examination of maps and hearing statements of the miners, also of the company officials, a report was submitted which is on file in the Chief Inspector's office at Columbus.

COAL LIST

LIST OF LARGE COAL COMPANIES IN OHIO, WITH ADDRESSES, FOR 1908.

| Name of Owner or Operator. | P. O. Address. |
|---|-----------------|
| Athens County. | |
| Baileys Run Coal Co..... | Toledo. |
| Black Diamond Coal and Coke Co..... | Columbus. |
| Canaan Coal Co..... | Canaanville. |
| Carbon Coal Mining Co..... | Marietta. |
| Carbondale Coal Co..... | Carbondale. |
| C. & H. C. & I. Co..... | Columbus. |
| Columbus Steam and Furnace Coal Co..... | Columbus. |
| Federal Coal Co..... | Marietta. |
| Glouster Coal Co..... | Glouster. |
| Hocking Valley Coal Co..... | Nelsonville. |
| Hisylvania Coal Co..... | Columbus. |
| Hocking Mining Co..... | Athens. |
| Imperial Coal Mining Co..... | Columbus. |
| Lorain Coal and Dock Co..... | Columbus. |
| Luhrig Coal Co..... | Cincinnati. |
| Maple Mining Co..... | Nelsonville. |
| Northern Fuel Co..... | Columbus. |
| New Pittsburg Coal Co..... | Columbus. |
| New York Coal Co..... | Columbus. |
| Nelsonville Sewer Pipe Co..... | Nelsonville. |
| Poston, C. L..... | Athens. |
| Schuler, J. F..... | Sharpsburg. |
| Silcott Coal Co., G. C..... | Nelsonville. |
| Sunday Creek Co..... | Columbus. |
| Winchester Mining Co..... | Athens. |
| York Clay and Mining Co..... | Nelsonville. |
| Belmont County. | |
| American Sheet and Tin Plate Co..... | Pittsburg, Pa. |
| Bannock Coal Co..... | Akron. |
| Barton Coal Co..... | Cleveland. |
| Bakewell Coal Co..... | Bellaire. |
| Bellaire Coal and Coke Co..... | Bellaire. |
| Belmont Coal Mining Co..... | Pittsburg, Pa. |
| Captina Coal Co..... | Armstrong Mills |
| Carnegie Steel Co..... | Bellaire. |
| Columbia Coal Co..... | Akron. |
| Colburg Coal Co..... | Columbus. |
| Cambria Mining Co..... | Toledo. |
| Ft. Pitt Coal Co..... | Pittsburg, Pa. |
| Flushing Coal Co..... | Elyria. |
| Gorrell Coal Co., J. W..... | Alliance. |

LIST OF LARGE COAL COMPANIES IN OHIO—Continued.

| Name of Owner or Operator. | P. O. Address. |
|------------------------------------|--------------------------|
| Belmont County—Concluded. | |
| | |
| Gordon Coal Co..... | Stewartsville. |
| Harrison-Morrison Mining Co..... | Flushing. |
| Highland Coal Co..... | Wheeling, W. Va. |
| Johnson Coal Co..... | Bellaire. |
| Kennon Coal & Mining Co..... | Cleveland. |
| Lorain Coal & Dock Co..... | Columbus. |
| Moore's Run Coal Co..... | Fairmount, W. Va. |
| Morgan Coal Co., A. J..... | Bellaire. |
| Pittsburg-Belmont Coal Co..... | Columbus. |
| Pittsburg & Cleveland Coal Co..... | Cleveland. |
| Purseglove Coal Co..... | St. Clairsville. |
| Provident Coal Co..... | St. Clairsville. |
| Raven Coal Co..... | Wheeling, West Virginia. |
| Roby-Somers Coal Co..... | Cleveland. |
| Rail & River Coal Co..... | Pittsburg. |
| St. Clair Coal Co..... | Cleveland. |
| Schick & Co., M. J..... | Bellaire. |
| Trolls Coal Mining Co..... | St. Clairsville. |
| Virginia Hill Coal Co..... | Cleveland. |
| Whitaker-Glessner Co..... | Wheeling, W. Va. |
| Werner Coal Co., Wm. A..... | Zanesville. |
| Y. & O. Coal Co..... | Cleveland. |
| Carroll County. | |
| Big Four Clay Co..... | Malvern. |
| Deveny-Kirk Coal Co..... | Salineville. |
| Deckman-Duty Brick Co..... | Malvern. |
| Greer-Beatty Clay Co..... | Magnolia. |
| Lincoln Coal Co..... | Sherodsville. |
| Magnolia Coal Co..... | Magnolia. |
| Metropolitan Paving Brick Co..... | Canton. |
| National Fire Proofing Co..... | Canton. |
| Ohio Mining & Railway Co..... | Massillon. |
| Pittsburg & Malvern Clay Co..... | Malvern. |
| Russell Hill Coal Co..... | Dell Roy. |
| Robinson Clay Product Co..... | Akron. |
| Somers Mining Co..... | Cleveland. |
| Sterling Mining Co..... | Cleveland. |
| Strip Vein Coal Co..... | Salineville. |
| Columbiana County. | |
| Big Vein Coal Co..... | Cleveland. |
| Buckeye Clay & Coal Co..... | East Liverpool. |
| Buck Coal Co..... | Salem. |

LIST OF LARGE COAL COMPANIES ADDRESSES, FOR

OHIO—Continued.

P. O. Address.

Name of Owner or Operator

cluded.

Athens County.

Baileys Run Coal Co.

Black Diamond Coal

Cannan Coal Co.

Carbon Coal Co.

Carbondale

C. & H. C.

Columb

Feder

Glo

H

Prospect Hill Coal Co.

Salem Coal Co.

Strahler, Jas. S.

Wadell Bros.

Wheat Hill Coal Co.

Cleveland.

Cleveland.

Leetonia.

Cleveland.

Lisbon.

East Palestine.

Leetonia.

Canton.

Negley.

Cleveland.

East Palestine.

Salem.

Salineville.

Homeworth.

East Palestine.

Coshocton County.

Barnes Coal & Mining Co.

Columbus Coal & Mining Co.

Coshocton Coal Co.

David Davis.

Locust Grove Coal Co.

Laird Bros., R. D. No. 2.

Morgan Run Coal & Mining Co.

Oden Valley Coal Co.

Warwick Coal Co.

Wade Coal Co.

Coshocton.

Coshocton.

Cleveland.

Conesville.

Coshocton.

Coshocton.

Cleveland.

Coshocton.

Cleveland.

Cleveland.

Gallia County.

Black Diamond Coal Co.

Dupre Coal Mining Co.

Swan Creek Coal Co.

Gallia.

Columbus.

Gallipolis.

Guernsey County.

Akron Coal Co.

Byesville Coal Co.

Consolidated Ohio Coal Co.

Clinton Coal & Mining Co.

Cambridge Coal & Mining Co.

Cambridge Valley Coal Co.

Cambridge Collieries Co.

Forsythe Coal Co.

Guernsey Clay Co.

Akron.

Byesville.

Birds Run.

Cambridge.

Parkersburg, W. Va.

Cambridge.

Cleveland.

Cambridge.

Cambridge.

LIST OF LARGE COAL COMPANIES IN OHIO—Continued.

| Name of Owner or Operator. | P. O. Address. |
|---------------------------------|-------------------|
| Wayne County—Concluded. | |
| Mass Coal Co..... | Akron. |
| Woods Consolidated Coal Co..... | Cambridge. |
| Coal Co..... | Cleveland. |
| Al Coal Co..... | Akron. |
| Coal Co..... | Chicago, Ill. |
| Coal Co..... | Cambridge. |
| Harrison County. | |
| ining Co., A. G..... | Toledo. |
| Coal & Mining Co..... | Dennison. |
| rg Block Coal Co..... | Pittsburg, Pa. |
| Coal Co..... | Cleveland. |
| Hocking County. | |
| Coal Co..... | Sand Run. |
| Hill Mining Co..... | Carbon Hill. |
| R..... | Nelsonville. |
| . C. & I. Co..... | Columbus. |
| al Co..... | Nelsonville. |
| g Fuel Co..... | Columbus. |
| in Coal Co..... | New Straitsville. |
| ille Coal Co..... | Nelsonville. |
| ul Fire Proofing Co..... | Pittsburg, Pa. |
| tsburg Coal Co..... | Columbus. |
| Coal Co..... | Nelsonville. |
| Creek Co..... | Columbus. |
| Jackson County. | |
| Coal Co..... | Wellston. |
| ong Coal Co..... | Jackson. |
| eld Mining Co..... | Jackson. |
| r Coal Co., Geo. Y..... | Wellston. |
| in Coal Co..... | Jackson. |
| it Coal Co..... | Jackson. |
| Coal Co..... | Jackson. |
| Coal Co..... | Jackson. |
| Coal Co..... | Wellston. |
| Coal & Iron Co..... | Wellston. |
| ic Coal Co..... | Wellston. |
| Coal Co..... | Wellston. |
| ire Brick Co..... | Oak Hill. |
| Coal Co..... | Coalton. |
| Coal Co..... | Coalton. |

LIST OF LARGE COAL COMPANIES IN OHIO—Continued.

| Name of Owner or Operator. | P. O. Address. |
|-------------------------------------|---------------------|
| Columbiana County—Concluded. | |
| Card & Prosser Coal Co..... | Cleveland. |
| Columbia Fire Clay Co..... | Cleveland. |
| Delmore Coal Co..... | Leetonia. |
| Fairfield Coal Co..... | Cleveland. |
| Herriott Coal Co..... | Lisbon. |
| Hoon Coal Co..... | East Palestine. |
| Neihelsel Coal Co..... | Leetonia. |
| National Fire Proofing Co..... | Canton. |
| Negley Coal Co..... | Negley. |
| Ohio & Pennsylvania Coal Co..... | Cleveland. |
| Prospect Hill Coal Co..... | East Palestine. |
| Salem Coal Co..... | Salem. |
| Strabley, Jas. S..... | Salineville. |
| Woolf Bros..... | Homeworth. |
| Wheat Hill Coal Co..... | East Palestine. |
| Coshocton County. | |
| Barnes Coal & Mining Co..... | Coshocton. |
| Columbus Coal & Mining Co..... | Coshocton. |
| Coshocton Coal Co..... | Cleveland. |
| David Davis..... | Conesville. |
| Locust Grove Coal Co..... | Coshocton. |
| Laird Bros., R. D. No. 2..... | Coshocton. |
| Morgan Run Coal & Mining Co..... | Cleveland. |
| Oden Valley Coal Co..... | Coshocton. |
| Warwick Coal Co..... | Cleveland. |
| Wade Coal Co..... | Cleveland. |
| Gallia County. | |
| Black Diamond Coal Co..... | Gallia. |
| Dupre Coal Mining Co..... | Columbus. |
| Swan Creek Coal Co..... | Gallipolis. |
| Guernsey County. | |
| Akron Coal Co..... | Akron. |
| Byesville Coal Co..... | Byesville. |
| Consolidated Ohio Coal Co..... | Birds Run. |
| Clinton Coal & Mining Co..... | Cambridge. |
| Cambridge Coal & Mining Co..... | Parkersburg, W. Va. |
| Cambridge Valley Coal Co..... | Cambridge. |
| Cambridge Collieries Co..... | Cleveland. |
| Forsythe Coal Co..... | Cambridge. |
| Guernsey Clay Co..... | Cambridge. |

LIST OF LARGE COAL COMPANIES IN OHIO—Continued.

| Name of Owner or Operator. | P. O. Address. |
|---------------------------------------|-------------------|
| Guernsey County—Concluded. | |
| Loomis Moss Coal Co..... | Akron. |
| Leatherwood Consolidated Coal Co..... | Cambridge. |
| Morris Coal Co..... | Cleveland. |
| National Coal Co..... | Akron. |
| O'Gara Coal Co..... | Chicago, Ill. |
| Puritan Coal Co..... | Cambridge. |
| Harrison County. | |
| Blair Mining Co., A. G..... | Toledo. |
| Newton Coal & Mining Co..... | Dennison. |
| Pittsburg Block Coal Co..... | Pittsburg, Pa. |
| Roby Coal Co..... | Cleveland. |
| Hocking County. | |
| Carbon Coal Co..... | Sand Run. |
| Carbon Hill Mining Co..... | Carbon Hill. |
| Cable, R..... | Nelsonville. |
| C. & H. C. & I. Co..... | Columbus. |
| Gem Coal Co..... | Nelsonville. |
| Hocking Fuel Co..... | Columbus. |
| Lost Run Coal Co..... | New Straitsville. |
| Nelsonville Coal Co..... | Nelsonville. |
| National Fire Proofing Co..... | Pittsburg, Pa. |
| New Pittsburg Coal Co..... | Columbus. |
| Royal Coal Co..... | Nelsonville. |
| Sunday Creek Co..... | Columbus. |
| Jackson County. | |
| Alma Coal Co..... | Wellston. |
| Armstrong Coal Co..... | Jackson. |
| Bloomfield Mining Co..... | Jackson. |
| Banchor Coal Co., Geo. Y..... | Wellston. |
| Chapman Coal Co..... | Jackson. |
| Crescent Coal Co..... | Jackson. |
| Cochran Coal Co..... | Jackson. |
| Central Coal Co..... | Jackson. |
| Comet Coal Co..... | Wellston. |
| Dayton Coal & Iron Co..... | Wellston. |
| Domestic Coal Co..... | Wellston. |
| DeWitt Coal Co..... | Wellston. |
| Davis Fire Brick Co..... | Oak Hill. |
| Daisy Coal Co..... | Coalton. |
| Evans Coal Co..... | Coalton. |

LIST OF LARGE COAL COMPANIES IN OHIO—Continued.

| Name of Owner or Operator. | P. O. Address. |
|--|------------------|
| Jackson County—Concluded. | |
| Elkhorn Coal Co..... | Jackson. |
| Emma Coal Co..... | Jackson. |
| Globe Iron Co..... | Jackson. |
| Gem City Coal Co..... | Dayton. |
| Gosline & Co., W. A..... | Toledo. |
| Harper Coal Co..... | Coalton. |
| Henry Holberg..... | Jackson. |
| Jones & Morgan..... | Jackson. |
| Jones Coal Co..... | Jackson. |
| Jackson Iron & Steel Co..... | Jackson. |
| Jackson & Decatur Coal Co..... | Jackson. |
| Jackson County Coal Co..... | Jackson. |
| Kessler Coal Co..... | Wellston. |
| Northern Coal Mining Co..... | Jackson. |
| Ohio Fire Brick Co..... | Oak Hill. |
| Pritchard, Henry—R. D. No. 1..... | Coalton. |
| Rempel Fuel Co..... | Rempel. |
| Rhodes & Sell..... | Coalton. |
| Sun Coal Co..... | Jackson. |
| See Kay Coal Co..... | Wellston. |
| Star Furnace Co..... | Jackson. |
| Symms Creek Coal Co..... | Rempel. |
| Superior Coal Co..... | Jackson. |
| Tom Corwin Coal Co..... | Dayton. |
| Wellston Collieries Co..... | Wellston. |
| Ward Coal Co..... | Oak Hill. |
| Jefferson County. | |
| American Sewer Pipe Co..... | Pittsburg, Pa. |
| Bergholz Coal & Electric Light Co..... | Bergholz. |
| Blyth Coal Co..... | Pittsburg, Pa. |
| East Ohio Sewer Pipe Co..... | Irondale. |
| Glens Run Coal Co..... | Cleveland. |
| Jefferson Coal Co..... | Cleveland. |
| Kaul-Oberkirch Co..... | Toronto. |
| La Belle Iron Works..... | Steubenville. |
| La Grange Coal Co..... | Wheeling, W. Va. |
| Morris-Poston Coal Co..... | Cleveland. |
| Minor Fire Clay Co..... | Cleveland. |
| Ohio & Pennsylvania Coal Co..... | Cleveland. |
| Rayland Coal Co..... | Pittsburg, Pa. |
| Rice Coal Co..... | Cleveland. |
| Roby Coal Co..... | Cleveland. |
| Russell Coal & Mining Co..... | Cleveland. |
| Shannon Coal Co..... | Wheeling, W. Va. |

LIST OF LARGE COAL COMPANIES IN OHIO—Continued.

| Name of Owner or Operator. | P. O. Address. |
|-------------------------------------|----------------|
| Jefferson County—Concluded. | |
| Smith, W. E..... | Wellsville. |
| Speaks, Jas..... | Steubenville. |
| Standard Fire Clay Co..... | Empire. |
| Standard Fire Clay Co..... | Irondale. |
| Steubenville Coal & Mining Co..... | Steubenville. |
| Stratton Fire Clay Co..... | Empire. |
| Toronto Fire Clay Co..... | Toronto. |
| United States Coal Co..... | Cleveland. |
| Witch Hazel Coal Co..... | Youngstown. |
| Wolf Run Coal Co..... | Cleveland. |
| W. & L. E. Coal & Mining Co..... | Cleveland. |
| Wayne Coal Co..... | Pittsburg, Pa. |
| Williams Coal & Coke Co., M. L..... | Pittsburg, Pa. |
| Y. & O. Coal Co..... | Cleveland. |
| Lawrence County. | |
| Buckhorn Coal Co..... | Buckhorn. |
| Black Fork Coal Co..... | Black Fork. |
| Ginn Company, The..... | Ironton. |
| Hall Coal Co., John F..... | Dayton. |
| Halley Coal Co..... | Pedro. |
| Hanging Rock Iron Co..... | Hanging Rock. |
| Ironton Portland Cement Co..... | Ironton. |
| Kelley Nail & Iron Co..... | Ironton. |
| Ryan, Benj..... | Coal Grove. |
| York Portland Cement Co..... | Portsmouth. |
| Mahoning County. | |
| Callihan & Allen..... | Salem. |
| Lowell Coal Mining Co..... | Youngstown. |
| McKinley Coal Co..... | Salem. |
| North Lima Development Co..... | North Lima. |
| Ohio Coal & Clay Co..... | Cleveland. |
| Rees & Chapel—R. D. No. 6..... | Salem. |
| Medina County. | |
| Gerstenslager & Son Coal Co..... | Wadsworth. |
| Hambleton Bros..... | Wadsworth. |
| Hutchinson Coal Co..... | Wadsworth. |
| James & Paynter..... | Wadsworth. |
| Kellar, Hollinger Coal Co..... | Wadsworth. |
| Reichard, F. T.—R. D. No. 1..... | Wadsworth. |

LIST OF LARGE COAL COMPANIES IN OHIO—Continued.

| Name of Owner or Operator. | P. O. Address. |
|----------------------------------|----------------|
| Meigs County. | |
| Bengel Bros. Mining Co..... | Pomeroy. |
| Dupre Coal Mining Co..... | Columbus. |
| Ebe Coal & Mining Co..... | Middleport. |
| Ebersbach, Martin..... | Pomeroy. |
| Harley Coal Co..... | Middleport. |
| Maynard Coal Co..... | Columbus. |
| Monkey Run Coal Co..... | Middleport. |
| Noble Summit Coal Co..... | Middleport. |
| Peacock Coal Co..... | Pomeroy. |
| Pittsburg Mining Co..... | Minersville. |
| Pomeroy Coal Co..... | Middleport. |
| Sallsbury Coal Co..... | Toledo. |
| Silver Run Coal Co..... | Middleport. |
| Schlagel Salt Co..... | Pomeroy. |
| Thomas Coal Co..... | Racine. |
| Vorhes, A. W..... | Pomeroy. |
| Morgan County. | |
| Carding Coal Co..... | Columbus. |
| Tropic Mining Co..... | Toledo. |
| Muskingum County. | |
| Blue Rock Coal Co..... | Gaysport. |
| Capital Coal & Coke Co..... | Columbus. |
| Duncan Run Coal Co..... | Detroit, Mich. |
| Elk Coal Co..... | Columbus. |
| Griffith Coal Co..... | Cannelville. |
| Maynard Bros..... | Columbus. |
| Muskingum Coal & Railway Co..... | Zanesville. |
| Pan-American Coal Co..... | Newark. |
| Turkey Run Coal Co..... | Cannelville. |
| Walnut Hill Coal Co..... | Detroit, Mich. |
| W. A. Werner..... | Zanesville. |
| Noble County. | |
| Belle Valley Coal Mining Co..... | Cambridge. |
| Coal Run Coal Co..... | Cambridge. |
| Guernsey Coal & Mining Co..... | Newark. |
| Marion Coal Co..... | Whigville. |
| O'Gara Coal Co..... | Chicago, Ill. |

LIST OF LARGE COAL COMPANIES IN OHIO—Continued.

| Name of Owner or Operator. | P. O. Address. |
|---------------------------------------|-------------------|
| Ottawa County (Gypsum). | |
| American Gypsum Co..... | Cleveland. |
| Consumers Gypsum Co..... | Port Clinton. |
| United States Gypsum Co..... | Gypsum. |
| Perry County. | |
| Bristol Coal Co..... | Newark. |
| Cambridge Collieries Co..... | Cleveland. |
| C. & H. C. & I. Co..... | Columbus. |
| Chicago & Hocking Coal Co..... | Toledo. |
| Chapman Mining Co..... | Moxahala. |
| Davis Bros..... | Shawnee. |
| Essex Coal Co., Calvin..... | New Straitsville. |
| Gibbs, Geo..... | New Straitsville. |
| Gibbs, Ambrose..... | New Straitsville. |
| Gosline & Co., W. A..... | Toledo. |
| Hamilton & Wallace Coal Co..... | Saltillo. |
| Indian Run Mining Co..... | Wellston. |
| Iron Point Low Vein Co..... | Shawnee. |
| Johnson & Sons, R..... | New Straitsville. |
| Jones Coal Co..... | New Straitsville. |
| Jenkins & Redfern..... | Shawnee. |
| Johnson Coal Mining Co..... | Columbus. |
| Kennon Coal & Mining Co..... | Cleveland. |
| New England Coal Co..... | Columbus. |
| Peabody Coal Co..... | Chicago, Ill. |
| Perry Coal Co..... | Somerset. |
| Simons, A..... | Redfield. |
| Shawnee Coal Mining Co..... | Shawnee. |
| Straitsville Impervious Brick Co..... | New Straitsville. |
| Sines Bros. & Co..... | New Straitsville. |
| Standard-Hocking Coal Co..... | Chicago, Ill. |
| Sunday Creek Company..... | Columbus. |
| Twentieth Century Coal Co..... | Columbus. |
| Union Coal Mining Co..... | Columbus. |
| Upson Coal & Mining Co..... | Newark. |
| Wilbren Coal Co..... | New Lexington. |
| Zanesville Coal Co..... | Crooksville. |
| Portage County. | |
| Hutson Coal Co..... | Lloyd. |
| South Palmyra Coal Co..... | Cleveland. |
| Strong Bros. Coal Co.—R. No. 14..... | Atwater. |

LIST OF LARGE COAL COMPANIES IN OHIO—Continued.

| Name of Owner or Operator. | P. O. Address. |
|--|-----------------|
| Scioto County. | |
| Morgan & Horton..... | Elfort. |
| Harbison-Walker Refractories Co..... | Pittsburg, Pa. |
| Stark County. | |
| Booth Coal Co..... | Navarre. |
| Buckeye Coal Co..... | Canal Fulton. |
| Caun Coal Co..... | Canton. |
| Edgefield Coal Co.—R. R. No. 2..... | Canton. |
| Haring-Wilson Coal Co..... | Massillon. |
| Keim Brick & Tile Co..... | Louisville. |
| Louisville Brick & Tile Co..... | Louisville. |
| Massillon Stone & Fire Brick Co..... | Massillon. |
| Massillon Crystal Coal Co..... | Massillon. |
| Massillon Coal Mining Co..... | Massillon. |
| Massillon-Navarre Coal Co..... | Cleveland. |
| Massillon City Coal Co..... | Massillon. |
| Massillon Elm-Run Coal Co..... | Cleveland. |
| National Fire Proofing Co..... | Canton. |
| Nimishilling Coal & Mineral Co..... | Lodi. |
| Plaskett, John..... | North Industry. |
| Pocock Coal Co..... | Massillon. |
| Roach, Wm.—No. 831 Wade Ave..... | Alliance. |
| Sonnhalter Coal Co..... | Massillon. |
| Steiner Coal Co..... | Canton. |
| South Massillon Coal Co..... | Massillon. |
| Smith, L. E..... | Greentown. |
| Smith Coal Co., G. F..... | New Berlin. |
| Tunnel Coal Co..... | Cleveland. |
| Taggart Coal Co..... | Massillon. |
| Whitacre Fire Proofing Co..... | Waynesburg. |
| Willow Grove Coal Co.—R. D. No. 1..... | Massillon. |
| Summit County. | |
| Brewster Coal Co..... | Akron. |
| Beechwood-Massillon Coal Co..... | Cleveland. |
| Cottage Grove Coal Co..... | South Akron. |
| Clinton Coal Co..... | Clinton. |
| Hametown Retail Coal Co.—R. R. No. 35..... | Barberton. |
| Robinson Clay Product Co..... | Akron. |
| Tuscarawas County. | |
| American Sheet & Tin Plate Co..... | Pittsburg, Pa. |
| American Coal Mining Co..... | Dennison. |

LIST OF LARGE COAL COMPANIES IN OHIO—Concluded.

| Name of Owner or Operator. | P. O. Address. |
|--|----------------|
| Tuscarawas County—Concluded. | |
| Beaver Dam Coal Co..... | Cleveland. |
| Buckeye Fire Clay Co..... | Uhrichsville. |
| Cleveland & Tuscarawas Coal Co..... | Cleveland. |
| Cole, H. E..... | Midvale. |
| Dennison Mining Co..... | Dennison. |
| East Goshen Coal Co..... | Cleveland. |
| Federal Clay Product Co..... | Mineral City. |
| Goshen Hill Coal Co..... | Cleveland. |
| Goshen Coal & Mining Co..... | Cleveland. |
| Goshen Valley Coal Co..... | Massillon. |
| Goshen Central Coal Co..... | Massillon. |
| Holden, C. E..... | Mineral City. |
| Howell Williams & Son..... | Midvale. |
| Midvale-Goshen Coal Co..... | Cleveland. |
| Massillon-Tuscarawas Coal Co..... | Massillon. |
| Markley, Geo..... | Mineral City. |
| Mullins Coal Co., Jas..... | Cleveland. |
| Nungesser, C. J..... | Beidler. |
| Novelty Brick & Coal Co..... | Newcomerstown. |
| Ohio Coal & Coke Co..... | Cleveland. |
| Peacock Coal Mining Co..... | Mineral City. |
| Ridgway Burton Co..... | Cleveland. |
| Robinson-Graves Sewer Pipe Co..... | Uhrichsville. |
| Robinson Clay Product Co..... | Akron. |
| Somerdale Coal Co..... | Cleveland. |
| Vinton County. | |
| Alma Cement Co..... | Oreton. |
| Alma Coal Co..... | Wellston. |
| Fobes-Tompkins Coal Co..... | Columbus. |
| Gallia Mining Co..... | Jackson. |
| Lawler, John L..... | Columbus. |
| Monitor Coal Co..... | Wellston. |
| McArthur Brick Co..... | McArthur. |
| Mohr-Minton Coal Co..... | Columbus. |
| Oreton Coal Mining Co..... | Toledo. |
| Raccoon Valley Coal Co..... | Columbus. |
| Star Coal Co..... | McArthur. |
| Valley Coal Co..... | Dayton. |
| Wayne County. | |
| J. D. Jones Coal Co.—R. R. No. 35..... | Barberton. |
| Massillon Coal Mining Co..... | Massillon. |
| West Lebanon Coal Co..... | Cleveland. |

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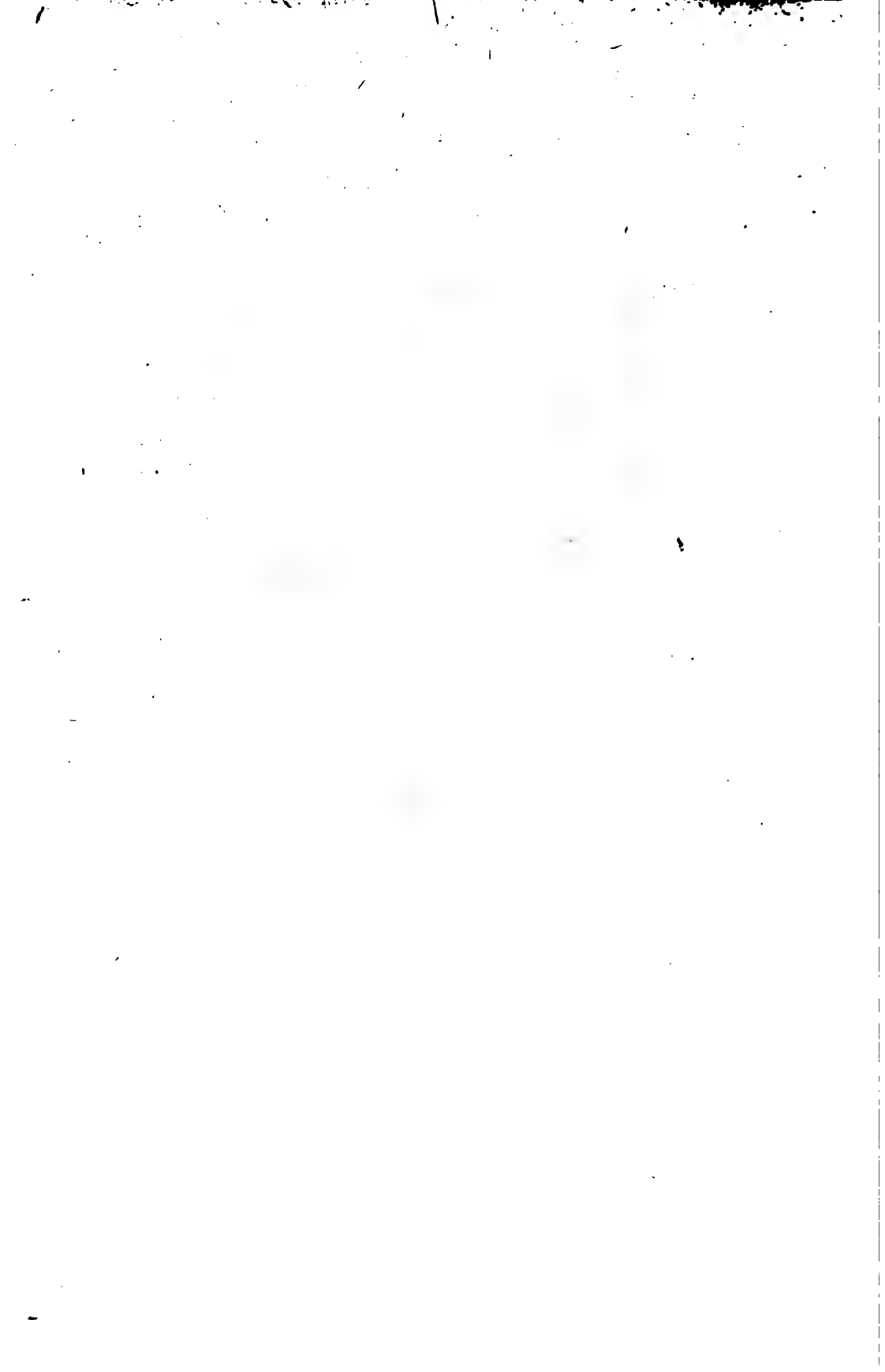


Chief Inspector of Mines

Thirty-Fifth Annual Report

**To the Governor of
the State of Ohio
for the Year Ending
December 31st, 1909**

GEORGE HARRISON, Chief Inspector



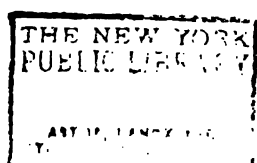




Photo by Baker.

PERCY TETLOW
 Irman.
 this report.

H. F. MCCAULEY, Ass't sec'y; L. CASSI
JAS. HENNESSEY, Vice Chairman.

Note. The report of the Commission made to

Thirty-Fifth Annual Report

OF THE

Chief Inspector of Mines

TO THE

Governor of the State of Ohio

FOR THE

Year Ending December 31, 1909



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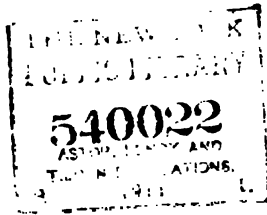


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PERSONNEL OF STATE MINING DEPARTMENT.

Chief Inspector of Mines.

GEO. HARRISONWellston, O.

First District.

Thos. Waters (Resigned July 31, 1909).....Wellston, O.
(Succeeded by Jno. Burke, Wellston, O., August 1, 1909.)

Second District.

Edw. Kennedy.....Carbon Hill, O.

Third District.

Jno. L. McDonald.....Glouster, O.

Fourth District.

Wm. C. Wiper (Resigned June 30, 1909).....Malta, O.
(Succeeded by Isaac Hill, Zanesville, O., July 1, 1909.) ..

Fifth District.

W. H. Turner.....Cambridge, O.

Sixth District.

Alex. Smith.....New Philadelphia, O.

Seventh District.

W. H. Miller.....Massillon, O.

Eighth District.

Lot Jenkins.....Bellaire, O.

Ninth District.

Thos. Morrison.....Sherodsville, O.

Tenth District.

Eben. Ezer Jones (Resigned April 30, 1909).....Martins Ferry, O.
(Succeeded by L. D. Devore, Bellaire, O., May 1, 1909.)

Chief Clerk.....Mary Kincaid, Columbus, O.
Stenographer.....Hattie McGhee, Columbus, O.
Statistical Clerk.....Hazel Sims, Columbus, O.
Recording Clerk.....Zella P. Harrison, Columbus, O.

LETTER OF TRANSMITTAL.

Hon. Judson Harmon, Governor of Ohio:

SIR:—As provided for in section two hundred and ninety-three (293) of the Revised Statutes, relating to mines and mining, I have the honor of submitting to you the Thirty-fifth Annual Report of this department.

Very truly yours,

GEO. HARRISON,
Chief Inspector of Mines.

April 30, 1910.

Report of the Chief Inspector of Mines

Hon. Judson Harmon, Governor of Ohio:

SIR:—As provided for in Section 293 of the Revised Statutes, I herewith submit to you the thirty-fifth annual report of this department.

THE COAL INDUSTRY.

The year in the coal industry, while showing no phenomenal or unprecedented features, was, on the whole, at least for the miners, a much more prosperous one than the one preceding it, the total production of coal increasing nearly one and one-half million tons, and the number of employes being 3,248 less, making the aggregate production per employe, inside and outside the mine, 67 tons more than in 1908, thereby increasing their yearly earnings to that extent.

The industry during the year apparently manifested considerable improvement in the trade, and is an indication that the recovery from the industrial and financial depression experienced during the latter part of 1907 and in 1908, if slow, was gradual and somewhat permanent, and that conditions were again assuming their normal sphere of activity, yet it is claimed by reliable authorities that the year was far from being a profitable one to many of those operating mines in Ohio.

The keen competition from other states, where the operation of mines is surrounded by exceptional natural advantages, and where coal can be produced at a comparatively low cost, and where non-union labor is generally employed, together with the unequal rates of transportation to market points, compelled many Ohio mine operators to either close their mines or dispose of their product at figures that would scarcely make ends meet, or allow a very low margin of profit.

It does not require very deep thought or great faculty of foresight, to convince any person of ordinary observation, who has any knowledge of the circumstances, that Ohio mine operators generally are placed at a very great disadvantage with many of those in neighboring states, and that the independent operators at least are being forced, wherever practical, to consolidate their properties and pool their interests, in order to curtail individual operating expenses, and better enable them to protect themselves against local strikes resulting from hasty actions of their employes, without consulting with, or receiving the sanction of the

responsible officials of the union, and from other drawbacks which continually beset and embarrass them in their business transactions with reliable retail dealers and large consumers of coal.

PRODUCTION.

Twenty-seven million, seven hundred and fifty-five thousand and thirty-two (27,755,032) tons of coal were mined during the year, an increase of 1,467,232 tons, as compared with the preceding year. Of this amount, 23,146,630 tons were mined by the use of machinery, and 4,608,402 tons were mined by the pick method.

PERSONS EMPLOYED.

Forty-seven thousand and nineteen (47,019) persons were employed during the year, a decrease of 3,248 compared with the previous year.

FATAL ACCIDENTS.

One source of congratulation which should not be lightly overlooked, is the fact that the death rate did not increase fully in proportion to the increase in production, the tonnage increasing 4.2% and the fatalities 2.7%.

One hundred and fifteen (115) fatal accidents occurred during the year, an increase of three over the year 1908. While this is undoubtedly too great a sacrifice of human life, when we take into consideration the ordinary hazards surrounding the employment in mines, and the little value some good, practical miners seem to place on their own lives, as shown by the unnecessary risks they assume in working in places where they know the roof is extremely dangerous, and wilfully neglect to securely prop it, as the law requires them to do, it is indeed a wonder that the number of fatalities is not in excess of what it is. Many lives are also lost by persons jumping on and off running trips of cars, and riding between loaded cars running at high speed; in the former case, the fault is almost exclusively due to the miner himself, but in the latter, the responsibility is divided between the reckless employe, and the indifferent mine-foreman who permits such want of proper discipline in any mine of which he assumes charge.

Another cause for consolation is the fact that we have again passed through a year free from the serious effects of any great mine calamity. The terrible catastrophe which befell the state of Illinois, and cast its pall of gloom over the mining community of Cherry, on November 13th, was one of the worst and most heart-rending in mining history. At your solicitation and instruction, in company with Mr. Percy Tetlow and Mr. H. F. McCauley, members of the Mining Commission, we visited the scene of the disaster, spending several days rendering such assistance and counsel as we were able, and as was required of us. The

scenes around the mine and in the village of Cherry, as is usually the case under such circumstances, were simply heart-rending, and can be much better imagined than described.

In keeping with past history in such unfortunate calamities, much unjust criticism was indulged in by people at a distance, and by a portion of the public press, against those who had the matter in charge. It is a much easier task to tear down than to build up, and much easier indeed to fight a raging fire in a coal mine with tongue or pen at long range than to brave the dangers of the deadly gases and perform the actual work at close quarters. There is no comparison between a fire on the surface and in the mine. In the mine, the deadly fumes and poisonous gases generated by combustion fill the dark chambers of the mine, preventing the progress of the explorer, who in his eagerness to save life or recover dead bodies, often risks too far; inhaling the poison, he becomes powerless, unconscious and falls down and dies. With a fire on the surface, the poisonous gases ascend to the elements above, and that danger is removed.

There might have been, and no doubt were, grievous mistakes made immediately following the outbreak of the fire, which resulted in the loss of many precious lives, but the mistakes were of the head, rather than the heart, and were no doubt caused by the excitement of the moment and the loss of the mine-foreman and assistant, with ten others who sacrificed their lives in a heroic, but fruitless, effort to rescue the men from the burning mine. As soon as the United States geological rescue men and the Illinois state mine inspectors reached the mine, and took charge of the work, everything was done that could be done.

A great cry was made about what some people were pleased to characterize the inhuman act of closing both shafts the second day after the fire, with the men in the mine, living or dead, forgetting that the fire below was belching forth a flame up both shafts, 318 feet deep, burning the timbers out and endangering the caving-in of both openings and the permanent abandonment of the mine with all the bodies entombed without hope of recovery. The sealing of the shafts for three days, cutting off a constant supply of pure oxygen, and forcing the smoke and black-damp back on the fire, was the only way and means at hand to sufficiently extinguish the raging element and reduce the temperature so as to enable men to get into the shaft to fight the fire, and the sealing of both openings for a time no doubt was of greater assistance in the work of rescuing the twenty men alive, after being entombed for one week than any other thing that could have been done.

APPOINTMENTS.

With your approval, three new district inspectors were appointed during the year to succeed three men whose terms of office had ex-

pired. L. D. Devore, of Bellaire, Belmont County, Ohio, succeeded Ebenezer Jones of the tenth district, on May 1st, Mr. Jones' term having expired on April 30th; Isaac Hill, of Cannelville, Muskingum County, Ohio, succeeded Wm. C. Wiper, of the fourth inspection district, on July 1st, Mr. Wiper's term having expired on April 30th; and John Burke, of Wellston, Jackson County, Ohio, who succeeded Thos. Waters, of the first inspection district, on August 1st, Mr. Waters' term having expired on April 30th.

MINING COMMISSION.

In the first annual report submitted to Governor Herrick after our appointment as chief inspector of mines, we recommended that a mining commission, composed of operators and miners, be appointed to revise the present mining laws, and recommend for passage such new mining legislation as would prove adequate and cover the conditions brought about by the new and improved methods of mining, and the extensive installation and use of labor-saving machinery and electric motive power in the mines. Governor Herrick in turn immediately brought it to the attention of the General Assembly by including it in the subject-matter of his annual message to that body in 1906, recommending that the matter be given due consideration at their hands. From our recommendations to Governor Harris in the two succeeding annual reports, he also called the attention of the General Assembly to the subject. A few prominent operators of the state were also advocating a commission of this nature, and recommended the provision for one to Governor Harris. These recommendations resulted in the final passage of a bill providing for such a commission, which was introduced by Senator R. A. Pollock, of Stark County, Ohio, himself a former craftsman, and the son of a prominent miners' leader of his time and whose influence, with that of many others, was instrumental in passing the first mining laws enacted in the state.

While most of the leading miners contended that such a commission could never agree on the many vital questions involved in the drafting of mining laws, and at first strongly opposed it, they finally gave the movement honorable and hearty support. This commission was appointed by Governor Harris, July 8, 1908, and its work was completed and the report submitted to you, January 14, 1910. The report was readily signed by each member of the commission, and carried with it their undivided support, being the first mining commission composed exclusively of practical miners and practical mine managers, that mining history has ever recorded as unanimously agreeing to and earnestly recommending the enactment into law of an entire new mining code. This report was submitted by you to the General Assembly, with a spe-

cial message in its favor, and we are happy to say, was soon enacted into law.

A complete synopsis of the commission's report will be found on pages 17-31 of this report, also a copy of your special message to the General Assembly. The facts relating to the filing and final passage of the new mining code are included in this report. Owing to their importance and bearing on the coal industry, and having been enacted so soon after the close of the calendar year, it was deemed advisable to do this.

It is impossible to enact laws that will prevent the reckless and careless acts of individuals which are the cause of a great number of individual fatalities and dire calamities in mines, but with better safeguards provided by the new code of laws, the duties of every person clearly defined, and penalties for violation or non-compliance, we earnestly hope for a lessening of the loss of life and limb, and a better protection to life and property in mines.

With a prosperous outlook in the industrial world, we see no reason why the present year should not be a more successful one than its predecessor for the persons engaged in producing the commodity, without the use of which the wheels of industry would cease to revolve.

In conclusion, I desire to express my high appreciation of your valuable aid in all matters pertaining to the work of the department, and particularly your steadfast support in securing and retaining men of high character and unquestionable experience and ability as district mine inspectors, under whose jurisdiction and watchful care so many lives and so much mining property depend.

To all our district inspectors, and to the office force, we also record our grateful thanks for their loyalty and faithful performance of duty.

Yours truly,

GEO. HARRISON,
Chief Inspector of Mines.

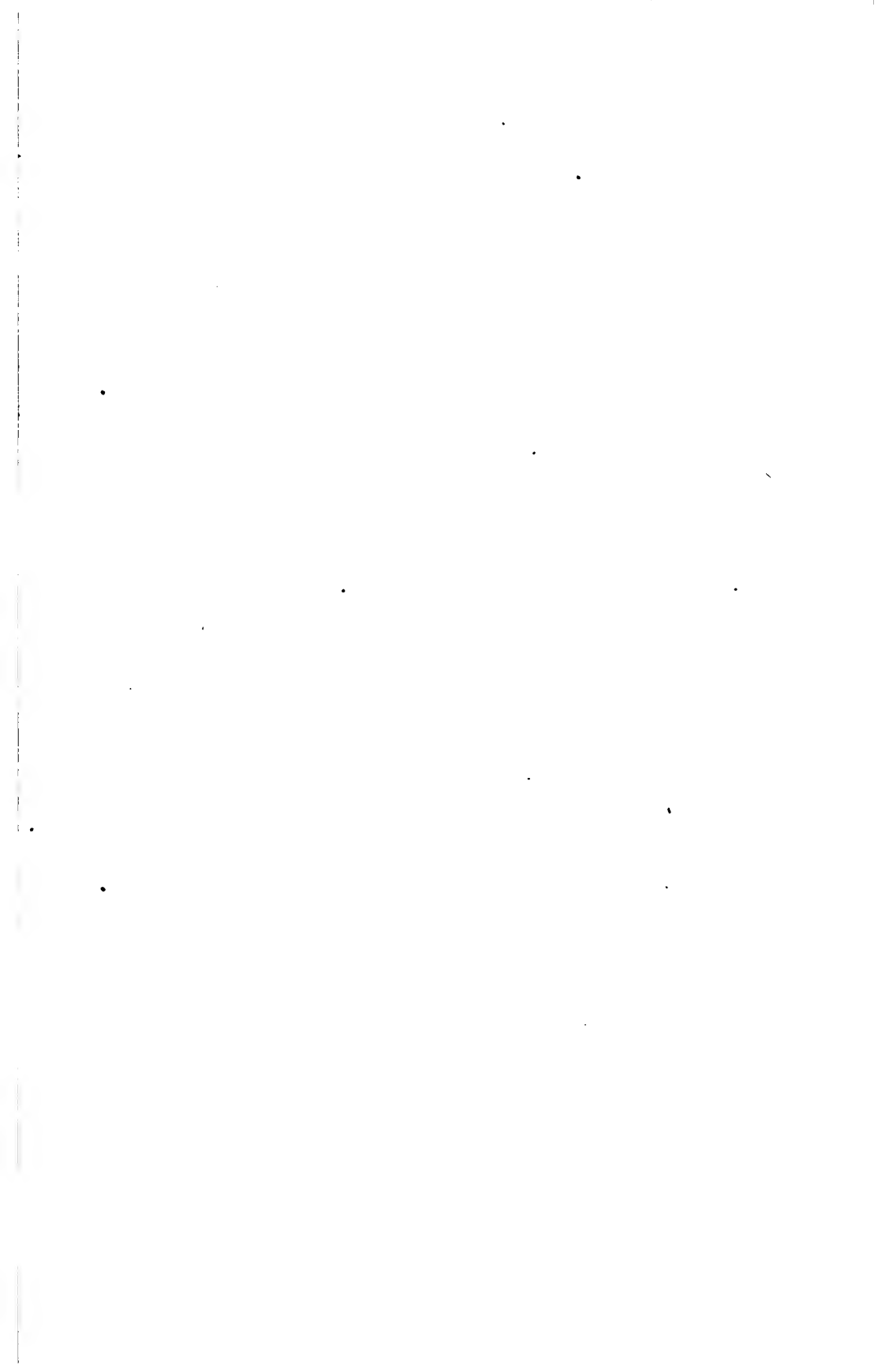
April 30, 1910.

**SUMMARY AND COMPARISON OF THE COAL TRADE OF OHIO FOR THE
YEARS 1908 AND 1909.**

| | 1908 | 1909 |
|---|------------|------------|
| Number of pick miners..... | 8,997 | 7,741 |
| Number of drillers, shooters and loaders..... | 24,882 | 23,805 |
| Number of hands operating machines..... | 3,167 | 3,159 |
| Number of day hands employed in both pick and machine mines..... | 13,221 | 12,316 |
| Total number of persons employed..... | 50,267 | 47,019 |
| Loss in number employed as compared with '08..... | ..... | 3,248 |
| Average number of days worked by pick miners..... | 160 | 182 |
| Average number of days worked by D. L. & S..... | 157 | 172 |
| Average number of days worked by machine runners..... | 157 | 171 |
| Number tons coal produced by pick..... | 4,676,869 | 4,608,402 |
| Number of tons produced by machinery..... | 21,610,931 | 23,146,630 |
| Total number of tons of coal produced..... | 26,287,800 | 27,755,032 |
| Gain in output as compared with the year '08..... | ..... | 1,467,232 |
| Per cent. of machine mined coal..... | 82.2 | 83.4 |
| Per cent. of pick-mined coal..... | 17.8 | 16.6 |
| Number of coal-producing counties..... | 29 | 29 |
| Average number tons lump coal mined by each pick miner per year..... | 350 | 395 |
| Average number tons lump coal mined by each pick miner per day..... | 2.2 | 2.2 |
| Average number tons lump coal mined by each driller, loader and shoooter per year..... | 589 | 658 |
| Average number tons lump coal mined by each driller, loader and shooter per day..... | 3.8 | 3.8 |
| Average number tons lump coal mined by each ma- chine runner per year..... | 4,627 | 4,956 |
| Average number tons lump coal mined by each ma- chine runner per day..... | 29.5 | 29.0 |
| Average number tons run of mine produced by each pick miner per year..... | 518 | 595 |
| Average tons run of mine produced by each pick miner per day..... | 3.2 | 3.3 |
| Average tons run of mine produced by driller, loader and shooter per year..... | 869 | 972 |
| Average tons run of mine produced by each driller, loader and shooter per day..... | 5.5 | 5.7 |
| Average tons run of mine produced by each ma- chine runner per year..... | 6,823 | 7,327 |
| Average tons run of mine produced by each runner per day..... | 43.5 | 42.8 |
| Number of fatal accidents..... | 112 | 115 |
| Number of serious accidents..... | 426 | 467 |
| Number of minor accidents..... | 170 | 226 |
| Total number of accidents..... | 708 | 808 |
| Number of deaths per thousand employed..... | 2.2 | 2.4 |
| Number serious accidents per thousand employed... | 8.5 | 9.9 |
| Number of minor accidents per thousand employed.. | 3.4 | 4.8 |
| Number of tons of coal mined to the life lost..... | 234,713 | 241,348 |
| Number persons employed for each life lost..... | 449 | 409 |
| Number of kegs of powder used as reported..... | 230,983 | 248,426 |
| Total number of new mines opened up..... | 55 | 38 |
| Number large mines suspended..... | 89 | 59 |
| Number of large mines abandoned..... | 37 | 34 |
| Total number mines in operation..... | 1,051 | 1,034 |
| Number mining machines in use..... | 1,445 | 1,395 |
| Number of motors in use..... | 383 | 405 |
| Total number of inspections made..... | 1,979 | 2,471 |
| Number sets scales tested..... | 69 | 82 |

**SUMMARY AND COMPARISON OF THE COAL TRADE OF OHIO FOR THE
YEARS 1908 AND 1909—Concluded.**

| | 1908 | 1909 |
|---|-----------|-----------|
| Number permanent improvements..... | 298 | 232 |
| Number maps filed..... | 422 | 417 |
| Number tons fire clay produced..... | 2,004,019 | 2,289,088 |
| Number fire clay producing counties..... | 19 | 20 |
| Number persons employed in clay-producing counties..... | 1,191 | 1,319 |
| Average number days worked in fire clay mines..... | 229 | 266 |
| Number counties producing limestone..... | 37 | 34 |
| Number persons employed in limestone quarries..... | 4,678 | 4,705 |
| Average number days worked in limestone quarries..... | 225 | 285 |
| Number tons gypsum mined..... | 154,436 | 228,804 |
| Number persons employed in gypsum mines..... | 192 | 200 |
| Average number days worked in gypsum mines..... | 243 | 265 |
| Number tons iron ore produced..... | 2,120 | 12,392 |



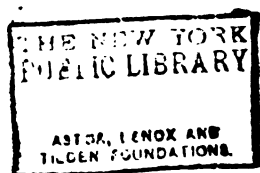
SPECIAL ARTICLES

R. A. Pollock, the author of the Commission bill, was born at North Lawrence, August 24th, 1870. At that time his father, John Pollock, being secretary of the miners' organization in its crude form, spent much of his time, during the sessions of the Legislature, working for the establishment of the office of Mine Inspector and other mining legislation, and, after all these years, we find a member of the same family toiling for the same cause.

Mr. Pollock Junior went to work at the mines at the age of thirteen years and remained there for a number of years, always taking a prominent part in the organization. In 1896 he represented the Massillon district as a member of the State Board, and during his service as a member of the Legislature he was always found fighting for just and honest measures that would foster the best interests of the mining industry in this state, and better safeguard the lives of the miners, and believed that if the miners and operators could get together and agree on mining matters affecting each it should be just as easy to agree on legislation in which they were both so vitally interested, and with such an end in view he never ceased in his labors until the Commission bill was passed. The benefit of his labors will be enjoyed by miner and operator alike.



**HON. R. A. POLLOCK, STATE SENATOR, MASSILLON, STARK CO., OHIO,
Author of the Ohio Mining Commission Bill, passed May 9, 1909.**



LETTER OF TRANSMITTAL OF THE OHIO MINING COMMISSION TO HON. JUDSON HARMON, GOVERNOR.

COLUMBUS, OHIO, January 14, 1910.

Hon. Judson Harmon, Governor of Ohio:

DEAR SIR:—By virtue of an act creating a mining commission, passed May 9th, 1908, we beg to submit to you our report. In accordance with said act, the six members first appointed met at the office of the chief inspector of mines, July 8th, 1908, and after perfecting a temporary organization, unanimously recommended the appointment of Mr. Geo. Harrison, chief inspector of mines, as the seventh member, who was immediately appointed and qualified.

The commission then organized permanently by electing Geo. Harrison, chairman; Jas. Hennessey, vice chairman; J. J. Roby, secretary, and H. F. McCauley, assistant secretary, after which the commission proceeded to make personal examination and inspection of mines and mining, and inspected three (3) mines in the Goshen or Middle district; four (4) mines in the Cambridge or Guernsey district; one (1) mine in the Amsterdam or North Jefferson district; two (2) mines in the Coshocton district; two (2) mines in the Jackson district; four (4) mines in the Crooksville or Muskingum district; nine (9) mines in the Hocking district, and seven (7) mines in the No. 8 or Belmont-Jefferson district, aggregating thirty-two (32) mines in all, and representing practically all the varying mining conditions within the state. During this inspection the commission had the honor to meet and confer with Dr. J. A. Holmes, representative of the United States Geological Survey; Messrs. Capt. Arthur Desborough of England; Victor Watteyne of Belgium, and Carl Meisner of Germany, the three foreign mining experts invited to this country by President Roosevelt.

The commission visited the government experimental station at Pittsburg, Pa., conducted by the United States Geological Survey, and witnessed demonstrations of the force of various explosives, the explosives being used alone, and being fired into coal dust which the commission had selected from representative mines in this state.

Pursuant to law, the commission invited before it the representatives of the miners and the operators, and gave them the fullest latitude in making suggestions and recommendations. The district inspectors of mines were also invited before the commission and given an opportunity to make suggestions and recommendations. Mr. F. L. Sessions, an

electrical engineer of repute, was invited before the commission and freely interrogated by the members of the commission on the subject of electricity as applied at, in and around mines.

After the foregoing preliminary and essential work was completed, the commission then took up for consideration the present laws relating to mines and mining in this state, and after full and careful investigation it was found that said laws were in some instances obsolete; in other instances, indefinite, and in most instances inadequate to meet present conditions existing in and about the mines in this state. Most of the provisions contained in the present laws were enacted many years ago, since which time the methods of mining have progressed, particularly in the use of electricity and electric machinery; many of the provisions carried no provisions for penalties, and therefore could not be enforced. The laws are almost silent as to defining the duties of employes, and as a result it was difficult to obtain proper and necessary discipline among them.

The commission therefore deemed it wise and expedient to draft an entire new code, which has been done, and which is intended shall, if enacted into law, repeal all existing legislation relating to mines and mining.

The work of the commission was of such a nature it was decided a useless expenditure to employ a mining or electrical engineer, inasmuch as the members of the commission were fully competent to handle this question.

It was deemed unnecessary to employ a stenographer constantly, inasmuch as members of the commission were able to make and keep the necessary memoranda by employing a stenographer at intervals to write the record and report.

The commission has prepared the provisions which it deems necessary to be enacted into law, and which should repeal existing laws relating to mines and mining, in the form of an act entitled, "An act to revise and consolidate the laws relating to the appointment, powers and duties of the chief inspector of mines and the district inspectors of mines, and to provide regulations governing mines and mining," which has been divided for convenience into eighty (80) sections to conform to the number of sections given by the codifying commission in its report, known as Sections 898 to 978, inclusive, Chapter 11, Part 1, of the Political Code. We have interposed sub-headings within parentheses, and made marginal notes, for convenience in referring to various propositions.

The members of the commission representing the operators, on account of the business interests represented by them; the members of the commission representing the miners, on account of business matters

connected with the interests of the miners, and the duties of the chief inspector of mines, precluded the possibility of a continuous, uninterrupted session, and therefore numerous sessions of a few days' duration were held from time to time, and in all, since the qualification of the members of the commission until the present time, the commission has been in session one hundred and sixty-three (163) days.

The varied conditions found in the various mining districts of the state, together with the conflicting interests of miners and operators, involved an almost endless amount of work and discussion, before the conflicting views on the various propositions could be harmonized, but each member gave due consideration to the claim of the other, and the commission as a whole has given due consideration to the parties interested, and without fear or favor has provided all reasonable regulations for the safety of employes in mines regardless of cost to the operator, unless it would create an unnecessary burden, without proper recompense in the way of safety to persons employed. Such specific duties for employes in mines have been provided as will, in the opinion of the commission, secure the proper discipline among the employes necessary for their safety and that of others.

The commission has given due consideration to the industry of the state as represented by both the operators and the employes of mines, and has taken into consideration competitive conditions from adjoining states, in some of which the condition of mines and the employment of the labor therein is not as favorable to those employed in the industry as is required by the provisions embodied in its report.

In pursuance with the act creating the commission we give our reasons for the various provisions, as follows:

- | | |
|--------------------|---|
| Sections 898, 899. | Practically the same as present law. |
| Section 900. | Requires twelve (12) district inspectors of mines, made necessary to secure proper inspection of mines at necessary intervals, the present law requiring but ten (10), and being inadequate. |
| Section 901. | Practically the same as present law, except qualifications made more specific. |
| Section 902. | Practically the same as the present law, except same is broadened, so that inspectors, in addition to being financially interested, shall not be under obligations to any persons connected with the working of a mine so as to influence them in the faithful and impartial discharge of duty. |
| Section 903. | Practically the same as present law. |
- 2—I. of M.

Section 904.

Practically the same as present law except it provides who is entitled to examine the records in the chief inspector's office relating to mines, the lack of which was a source of unnecessary annoyance to the chief inspector under the present law.

Section 905.

Provides for an increase in compensation of a chief inspector of mines and district inspectors of mines hereafter appointed, the compensation of incumbents remaining as under the present law. Since the compensation of inspectors was fixed years ago, the duties of inspectors have multiplied. Compensation of labor generally has increased greatly, and considering the requirements made of inspectors and the hazards connected with their position, the compensation as provided by the present law is not commensurate with qualifications, duties performed, and dangers encountered; the compensation of incumbents not being changed for constitutional reasons, and it was deemed unwise to legislate the entire department out of office. This section provides all necessary expenses, approved by the chief inspector of mines, without limitation, for the reason that the present law fixes a limit of sixty-five dollars per month, which in many cases is inadequate, and it was deemed advisable to place the inspector in a position where he could do the necessary traveling in connection with his duties without restriction.

Section 906.

Practically the same as the present law, except it provides that copies of the inspection reports of a mine be mailed promptly to the office of the owner, lessee or agent, believing that same will secure better results, in that the operator will be advised, and the mine foreman and superintendent cannot suppress or keep from the owner the true condition of the mine.

Section 907.

Practically the same as the present law, except that it provides that a copy of the investigation of a fatal accident be mailed to the owner, lessee or agent, for the same good reasons as assigned in Section 906.

Section 908.

Practically the same as the present law.

- Section 909. Practically the same as the present law, except more specific.
- Section 910. Practically the same as the present law, except it is more specific, and requires that the inspector certify in writing the condition of scales, thereby eliminating danger of controversy arising from verbal statements.
- Section 911. Practically the same as the present law, except in the exercise of discretionary power relating to the application of electricity, the joint action of the district inspector of mines and the chief inspector of mines is required.
- Section 912. Practically the same as the present law.
- Section 913. Practically the same as the present law.
- Section 914. Specifically prescribes duties of inspectors in relation to oil and gas wells, so as to better secure the protection of mines against the dangers arising from such wells being drilled and operated through the coal measures.
- Section 915. Provides that the chief inspector of mines provide and maintain the necessary safety appliances to facilitate inspection of mines and safely conduct rescue work in the event of emergency, the present law being silent. The Mining Department, in charge of the safety of 50,000 persons, should be provided with the necessary modern and approved facilities necessary to meet probable emergencies.
- Section 916. Practically the same as the present law, but places the chief inspector of mines in position to enforce compliance with the provisions of law, or suspend the operation of a mine until the law is complied with.
- Section 917. Practically the same as the present law, enabling the chief inspector of mines to enforce the provisions requiring the mapping of mines, and is broadened so that action may be brought in Franklin county.
- Sections 918, 919. While embodying the present law, which required the filing of a bond before charges of misconduct in office could be made against an inspector, this section is broadened so that charges against a district inspector shall first

be filed with the chief inspector of mines, and that an appeal from the decision of the chief inspector of mines and charges against the chief inspector of mines can be filed with the governor without a bond, and that appeal can be made from the finding of the governor, requiring the convening of a board of examiners by filing a bond. When the filing of complaints is made so difficult as under the present law, inspectors may not be so careful in conduct in office, and it is believed that the changes made will be beneficial to the service.

Section 920.

The present law having no uniformity in name of office or inspectors, and it being desirable in drawing this code to adopt uniformity in name, and undesirable that the Mining Department be disturbed thereby, hence this provision.

Section 921.

Practically the same as the apparent intent of the present law, but more definitely defined, and requires that the coroner, at the request of the owner, lessee or agent, files a copy of an inquest and testimony, in case of a fatal accident, with the owner, lessee or agent at his cost.

Section 922.

The present law requires a minimum of one hundred cubic feet of air per person in a mine, and is silent as to the means of providing such ventilation, while this provision requires an increased volume of air, and provides for the necessary means of producing same; an additional volume of air being required in mines generating fire-damp, thereby providing better ventilation of mines.

Section 923.

Embodies all the essential provisions of the present law, which requires that all main doors, shall have an attendant, while this section provides that all doors used in directing the ventilation have an attendant whose first duty shall be to the door.

Section 924.

The present law, while providing a minimum volume of air, is silent as to interruption of the ventilation. and as to the ventilation starting, before the persons enter the mine, a sufficient time to clear the mine of gases. This section more specifically provides how the ventilation shall be conducted, and also

provides for recording pressure gauges at mines generating fire-damp, so that inspectors may know at any time within ninety days condition of the ventilation at such mines.

Section 925.

Embodies all the features of the present law, and more specifically provides for attention to mines generating fire-damp, necessary for the proper protection to employees.

Section 926.

The present law relating to breakthroughs being indefinite, and being capable of more than one interpretation, has given rise to controversy. While apparently providing for breakthroughs sixty feet apart, a compliance of which near the openings to a mine unnecessarily cut up the pillars supporting the opening, and when applied in a group of rooms as thus interpreted, brought breakthroughs opposite, giving less support to the roof, and men were at times in rooms sixty feet away from a breakthrough. As applied in other cases, breakthroughs were made on one side of a room in group at sixty feet, and on the other side of the same room at 120 feet, and men were still at times sixty feet away from a breakthrough; and apparently the law in both cases was complied with. This section provides for breakthroughs being made 100 feet apart for a distance of 400 feet surrounding the openings, giving better support where it is needed most, and where there is the least trouble in ventilating; provides that in entries, breakthroughs shall be made 60 feet apart, and in rooms in a group not adjoining a solid block shall have a breakthrough on one side at 40 feet, and on the other side at 80 feet, with breakthroughs thereafter 80 feet apart, and by this provision men will not be further than 60 feet from a breakthrough at any time; and in rooms in a group, except the rooms adjoining a solid block, the men will not be further than 40 feet from a breakthrough and the breakthroughs will not come opposite, giving better support to the roof, and should give better distribution of air.

Sections 927, 928.

These sections more specifically provide safety appliances for hoisting of persons in shafts, and embody all the features of the present law.

Section 929.

This section provides where persons are hoisted in a vertical shaft, some person shall be in charge of the hoisting of such persons and give the proper signals so as to offer better protection to persons while being lowered into and hoisted out of the mine. This section also provides that unless a suitable stairway be provided in shafts less than 100 feet deep, persons shall be hoisted, and where the only means of egress is by vertical shaft of more than 100 feet in depth, that persons shall be lowered into and hoisted out of the mine; the present law being silent in regard to the same.

Section 930.

This section embodies all the features of the present law relating to second openings at a mine, but is made more specific, and also provides for fire protection at shafts, which is not required by the present law.

Section 931.

This section provides for two separate and distinct traveling ways from the interior workings of the mine to the openings, the present law being silent in regard to traveling ways. This section also embodies all the essential features of the present law relating to passage way from one side of a shaft to the other, and for refuge holes along mechanical haulage ways, and is made more specific.

Section 932.

This section provides better protection to persons traveling in a mine at a point where locomotives are detached from trains of moving cars, the present law being silent. This section also provides for an additional opening for the safe egress of persons employed in a mine, and where traveling ways already provided are likely to be inundated from water from the surface; the present law being silent.

Section 933.

This section embodies all the features of the present law relating to the supplying of timber, and is made more specific.

Section 934.

This section provides for better means of caring for injured persons than provided by the present law.

Sections 935, 936, 937. Provide more specifically for the mapping of mines than provided for in the present law.

- Section 938. Requires specific precautions on approaching the workings of an abandoned mine, as a means of guarding against probable inundation or encountering an accumulation of fire-damp; the present law being silent.
- Section 939. Requires notice to the chief inspector of mines in all matters that would seem to affect the safety of persons employed in a mine, and embodies all the provisions of the present law, but being more specific.
- Section 940. Requires notice of fatal accidents and personal injury be given to the chief inspector of mines, and that annual reports be made to the chief inspector, showing the result of operations for the year, practically as provided for in the present law.
- Section 941. Requires operator to provide test weights to facilitate the testing of scales and relieve the inspector of inconvenience in transporting same; and also requires the operator to keep on hand safety lamps, the present law being silent. This section also provides a sufficient shield on mining machines, as provided by the present law.
- Section 942. Provides uniform system of signals for use at shaft mines, and in order to insure uniformity, the mining department is required to furnish the bulletins to be posted at the mine. This section also provides an emergency signal in each shaft so that persons may signal from the cage in the event it is stopped between the top and bottom landings, the present law being silent.
- Section 943. Provides that a light be provided at all danger points in a mine; that no open light be used as a stationary light, and forbids the use of kerosene lamps in a mine. This section also provides that a light be maintained on the front end of all trains of cars operated by mechanical haulage, and that a signal or marker be carried on the rear end of each train hauled by a locomotive, to indicate when the trip has passed, the present law being silent.
- Section 944. Forbids the employment of minors under certain ages, as provided in the present law; requires sprinkling of airways where the air

Section 929.

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is charged with dust, and the removal of ac-
cumulated matter, explosive in its nature,
as provided in the present law, and provides
that the permanent boilers at a mine be not
nearer than sixty feet to a mine opening, or
an inflammable structure connected there-
with, as provided in the present law, and
also regulates the storing of oil in a mine;
the present law being silent.

Provides how underground stables shall be
constructed and cared for, so as to reduce
the danger of fire from that source to a
minimum, the present law being silent.

Section 945.

Section 946.

Provides rigid regulations for the use of
gasoline, naphtha or kerosene engines in
mines, and is restricted to use for pumping
purposes and subject to the approval of the
chief inspector of mines, the present law be-
ing silent.

Section 947.

Provides specifically how wires for conducting
electricity in mines shall be constructed and
maintained, so as to reduce the probability
of shock to persons to a minimum, the pres-
ent law placing the responsibility almost
entirely upon the mining department; spe-
cific provisions of the law being imprac-
ticable of application.

Section 948.

Forbids future installation of alternating cur-
rent for use in the mine, except for operat-
ing the necessary machinery to convert the
direct current, and prescribes how the high-
er voltage shall be used. It was considered
too burdensome to require the removal of
installations already made and carrying the
higher voltage, since the installations were
made under the present law, which does not
prohibit it.

Section 949.

Provides how the opening of new mines shall
be conducted, and the employes engaged
thereat shall be protected, the present law
being silent.

Section 950.

Provides for additional openings, when the
ways and means of egress otherwise pro-
vided for, in the opinion of the district in-
spector of mines, and the chief inspector of
mines, jointly, become inadequate, either
from long distance of the traveling

ways, or from extra hazards of a permanent nature, there being great possibility of disputes arising between the inspector, and the owner, lessee or agent, as to the provisions, and in view of the fact that the requirement might involve a very considerable expenditure to comply therewith, it was deemed advisable to provide for an appeal to court, which, it was assumed, would adjudicate the dispute so as to secure to the employes of mines every reasonable safeguard; the present law being silent as to the right to require additional openings.

- Sections 951, 952, 953. Provide specific duties for superintendents and mine-foremen, making it incumbent upon them to see that the provisions of the mining laws are carried out, and infractions thereof promptly adjusted, the present law being practically silent.
- Section 954. Prescribes specific duties for overseer, whose duty shall be to give supervision and instruction to inexperienced persons employed at mining, the present law being silent.
- Section 955. Provides specific duties for the stableman and requires that he see that the provisions relating to safeguarding stables are carried out. It also provides specific duties for fire-boss, who is required to carefully examine each mine, containing fire-damp, and see to the protection of persons employed in a mine, from danger of explosive gas. Embodies all the features of the present law, but is enlarged and made more specific.
- Section 956. Prescribes the duties of the miner with relation to his safety while at work in a mine, the present law being almost silent.
- Section 957. Prescribes duties of machine runners and helpers, relating to their safety and that of others in connection with operating mining machines, the present law being silent.
- Section 958. Provides duties for persons in charge of mechanical haulage trips, and drivers handling cars. This section requires all persons in charge of moving cars to see that the doors used in connection with the ventilation of a mine are closed promptly after trips pass through, the present law being silent.

- Section 959. Provides duties in a general way for all employes of a mine in relation to their safety, and that of others, and forbids persons taking intoxicants to a mine, or going to the mine under influence thereof, the present law being silent.
- Section 960. Provides duties for employes generally, relating to safety, and persons employed in a mine, and forbids committing any act with intent to defraud, the present law being silent as to some of these provisions.
- Section 961. Forbids persons riding on haulage trips contrary to law, and prescribes the size of lamps used for open lights in the mine, the present law being silent.
- Sections 962, 963. Provides regulations for the tamping and firing of explosives, and embodies all the essential features of the present law, but being enlarged and made more specific.
- Section 964. Provides regulations for persons not employes, going into a mine, or about same, the present law being silent.
- Section 965. Provides who shall work at mining, and under what conditions; and embodies the provisions of the present law requiring that a person have not less than twelve months' experience before being allowed to work at mining by himself in a mine generating fire-damp. It also provides that no person work by himself at mining in any mine until he has had not less than nine months' experience, and unless he has worked the required time with or under the direction of a practical miner, he shall be under the supervision of a competent overseer until he shall have worked the required time; it being considered unsafe for an inexperienced person to work other than with an experienced person, until he has had the necessary experience; the present law being silent as to supervision of inexperienced persons other than in mines generating fire-damp.
- Section 966. Requires oath and bond of weighmaster, similar to the provisions of the present law.
- Section 967. Provides that a committee of miners may inspect a mine and report the condition there-

of to the chief inspector of mines, as provided by the present law.

Section 968.

Provides that the owner, lessee or agent of a mine may appropriate land for purposes necessary to comply with the provisions of this act, and provide for the necessary protection of the employees; the present law providing that land for an additional opening may be appropriated, but inasmuch as the provisions of our code make additional requirements, the provisions relating to appropriations have been enlarged accordingly.

Section 969.

Provides for examination and survey of a mine by the land owner interested in adjoining or adjacent land, and is practically the same as the present law, except the number of persons to be admitted at one time is restricted, and requires that advance notice, in writing, be given to the owner, lessee or agent.

Section 970.

Provides that the miners at a mine where the earnings depend upon the weight of coal mined, may appoint a check-weighman, as provided in the present law, a similar provision being made for check-weighman for the land owner, as provided in the present law. We have provided, however, that check-weighmen shall not unnecessarily interfere with the scales, machinery or apparatus, or make any false entry of any weight. This section also provides that the miners employed at a mine where the earnings depend upon measurements, may appoint a check-measurer to see the measurements made, and make a record for the information of the employees interested; the present law being silent as to the right for a check-measurer.

Section 971.

Provides in substantially the same manner as the present law, for the crossing of public highways by mines and quarries.

Section 972.

Relating to right of action for injury sustained, and lien on property for labor, is practically the same as the present law.

Section 973.

Provides how oil and gas wells shall be drilled through the coal measures, and what shall be done when same are abandoned.

Restrictions are placed upon drilling any oil or gas well close to an opening of a mine used as a means of egress, and upon drilling such well through the workings of a mine so as to interrupt the operations of the mine or endanger the persons therein. The present law relating thereto is wholly inadequate in that it simply requires a sealing or plugging of the well below the coal measures. No notice is required to the mining department, and persons have indiscriminately drilled through the coal measures, and the time of the inspectors, if they learn at all about such well, is consumed in looking up the persons interested in the well, and securing the sealing or plugging, which at best accomplishes little, if any, good.

The oil and gas-bearing strata of our state lie hundreds of feet lower than the coal measures, and when wells penetrate the coal measures, and the oil and gas-bearing strata, the wells become closed at the surface, after abandonment, and the gas generated from the oil and gas strata finds ready escape into the coal seams and is stored up as a deadly menace to the persons employed in the mine, and has resulted in great calamities in other states.

The coal seams being more porous than any of the measures above the gas-bearing strata, and being broken by cleavage, readily absorb the gas from the strata below, and in the process of mining, if the vein be cut across an abandoned well, closed at the surface, gas under great pressure is likely to be encountered, which will readily fill large sections of the mine, and if ignited by a miner's lamp, would result in wholesale destruction of life and property, as has too often happened in other states.

We, therefore, have provided that each well shall be securely cased from a point 50 feet below the lowest seam of coal to the surface, and that when such well is abandoned, the casing be extended 10 feet above the surface, and protected from being filled, so that the gas may readily escape into the atmosphere, which is the best solution of this all-dangerous proposition.

In order that the mining department may know when a well is to be drilled, we have required that advance notice be given to the chief inspector of mines.

ions 974, 975.

The present law relating to illuminating oil for use in mines requires that same does not exceed in gravity 24 degrees Tagliabue, at a temperature of 60 degrees Fahrenheit. At the time this law was enacted, the restrictions as to gravity necessitated using about 84% of cotton seed, with about 16% of miners' neutral, or high gravity mineral oil, but since its enactment, the compounders of oil have taken advantage of the weakness of the law and used less cotton seed and a correspondingly greater quantity of low gravity mineral oil, which emitted large volumes of smoke, and in some instances the waste of refineries, and often rosin, have been used, and yet the law technically complied with.

We, therefore, have provided that the composition of miners' oil shall be not less than 84% of pure animal or vegetable oil, and not more than 16% pure mineral oil; the former with a gravity not exceeding 22 degrees and the latter with a gravity not less than 35 degrees Tagliabue, which is calculated to make the proper mixture, with a minimum volume of smoke, an excess of which is injurious to the health of employes, in that it vitiates the air which they by necessity breathe.

We have also required that each barrel or package bears the label showing the composition of the oil, and have forbidden the sale of oil for illuminating purposes, other than that prescribed, and have forbidden the adulteration of same or the use of any oil other than that prescribed.

[A slight change was made in this section in submitting the final report.]

on 976.

Relating to penalties: Provides a penalty for the coroner violating the provisions of this act, relating to making of inquests; for the owner, lessee or agent who has knowledge of a violation and permits a continuance of a violation; for superintendents, mine-foremen, foremen, or overseers, who violate the provisions of this act; an employe of a mine who violates this act; for persons not employes who violate the provisions of this act, the penalties being graduated, as in the opinion of the commission will best and most readily secure a compliance with these provisions.

The penalty for violation by an employe in cases where the violation will not necessar-

ily result in grave danger, has been fixed at a nominal sum, of from five to ten dollars, with the same fine, or imprisonment, or both, for second and subsequent offenses.

The penalty for an employe entering a mine generating fire-damp, before it is reported safe, and for going beyond a danger signal indicating presence of fire-damp, has been made much higher, because of the grave danger it may create.

The penalty against the owner, lessee or agent, who is seldom in active charge, has been fixed at a medium penalty, but high enough to assure compliance with the provisions; besides, the chief inspector of mines has recourse by injunction.

The penalty against superintendent, mine-foreman and overseer is fixed at double that given employes for lesser offenses.

The penalty against persons drilling oil and gas wells has been made the highest, because of the grave danger created by non-compliance with the provisions.

The penalty against persons unlawfully compounding and selling illuminating oil, has been fixed at an amount as ought to insure a compliance with the provisions.

Section 977.

Provides fines collected by reason of prosecutions begun under this act, to be paid to the chief inspector of mines, and by him to the state treasury, in order that the mining department may be advised of the prosecutions.

Section 978.

Providing how prosecutions shall be controlled as provided in this manner, in order that prosecutions may be readily made before a justice of the peace, and a decision arrived at, without unnecessary delay, which will aid in securing the enforcement of the law, and avoid unduly burdening the courts of higher resort.

This act to take effect in sixty (60) days after its passage and approval, for the reason that many new requirements are made of the owner, lessee or agent, which will necessitate changes in the physical condition of mines, and this length of time will be necessary to secure material and make the changes; besides, it will require some time to have the act printed and circulated before the persons interested be advised, therefore it is deemed wise not to have the act take effect at an earlier date.

Provides for the repeal of all present legislation relating to mines and mining, in order that there be no confusion.

In conclusion, will say, we have covered all the conditions existing in mines, except the question of "blasting off the solid," which upon investigation we found to be so varying in different districts of the state that it was found impossible to cover the questions equitably, as between employers and employes of the same district, or as between the several districts, by any specific provisions agreeable to all members. This being a practice, section 911 enables the mine department to regulate same as the conditions exist and safety requires.

We recommend that the provisions embodied in the bill submitted herewith be speedily enacted into law, and should you, or the General Assembly, desire further information from us regarding the provisions, or our reasons therefor, we shall be at your or its service, upon command.

Respectfully submitted,

GEO. HARRISON, *Chairman*;
JAS. HENNESSY, *Vice Chairman*;
J. J. ROBY, *Secretary*;
H. F. McCAULEY, *Assistant Secretary*;
C. L. CASSINGHAM,
G. C. WEITZELL,
PERCY TETLOW.

SPECIAL MESSAGE TO THE GENERAL ASSEMBLY BY GOVERNOR HARMON JANUARY 31, 1910.

STATE OF OHIO, EXECUTIVE DEPARTMENT,
OFFICE OF THE GOVERNOR.

Columbus, January 31, 1910.

To the General Assembly:

The tidings of the recent mining disaster at Cherry, Illinois, constituted at once an appeal for the sufferers and a warning of the possibility of a like calamity in Ohio, where so many thousands of men and millions of capital are engaged in mining. I accordingly tendered assistance through the governor of Illinois, and sent the chief mine inspector and several members of the mining commission to Cherry to render such aid as they could, and also to study the causes and conditions of the accident whose results were so dreadful.

While this commission had devoted much time to the purposes for which they were appointed under the act approved May 9, 1908, and would doubtless have reached conclusions which would have been of great value, there is no doubt that the catastrophe at Cherry had the effect of stimulating their efforts to devise the best means for securing lives and property; and I have the honor now to lay before you their very thorough and complete report, which has been filed with me pursuant to said act.

The commission was made up of three practical miners, three operators of coal mines, and a seventh to be chosen by the other six. They chose Mr. George Harrison, the chief mine inspector. I am informed that this is the first instance of a unanimous agreement by a commission so composed on the entire subject of the proper regulation and safeguarding of the mining industry, which indicates that all the members of this commission were actuated by humanity and a high sense of public duty, instead of by narrow and selfish motives. This fact entitles their report, which presents and recommends the codification of all the laws relative to mining, to the greatest respect and most careful consideration. So far as my limited knowledge of the subject enables me to form an opinion, I believe that the legislation proposed will prove effective and wise.

JUDSON HARMON,
Governor.

"SOLID SHOOTING OR BLASTING COAL OFF THE SOLID."

There was considerable agitation on the question of "solid shooting" during the year 1909, particularly in Columbiana county. In fact, it reached the point where the Department was called upon to make an investigation of the mines, viz., Big Walnut, McNab and Delmore, the two latter being located in close proximity to the Big Walnut Mine, Columbiana county, Ohio, and operated by the Card & Prosser Coal Co., Cleveland, O. This county is one of the principal districts in the state where this method of producing coal is in practice, and as such was the cause of the greater part of the agitation in evidence during the year.

This was brought about on account of the differences arising between the operators and miners employed at the Big Walnut Mine in regard to the employment and payment of shot firers, the operators contending that their employment was no more necessary than at the adjacent mines. Both parties to the controversy insisted on an investigation and comparison of conditions of these mines by the Mining Department.

The question of "solid shooting" was not a new one—indeed, during the year 1904 the question was taken up by the Department in this same district, and a report of the investigation was made at that time, in which the Department disapproved in the strongest possible terms of this method of mining coal, stating objections and offering suggestions for a safer and more practical way of preparing the coal by undercutting before mining. However, these suggestions were not received with popular favor at that time, although two shot firers were severely burned at the Big Walnut mine, Columbiana county, on November 19th, 1908, and the same method continued in vogue until during the latter part of the year 1909, when two shot firers were killed, on December 16th, at the Delmore mine, Columbiana county, a full account and report of which will be found on pages 54-56.

After a thorough investigation into the cause of the explosion, rigid rules were issued to both miners and operators. It seemed, however, that this deplorable catastrophe, in which two men sacrificed their lives, was not sufficient warning against this system of mining coal, and these rules governing the method of mining recommended and issued by the Department, were grossly and criminally disregarded (while the position taken by the Department was publicly and severely criticised), as a second explosion took place at the same mine, during the first week in January, 1910, and another life paid the penalty, a third shot firer having been killed, being directly attributable to this atrocious method of mining coal.

A second investigation was made, and strict rules and regulations were again issued by the Department setting forth the manner in which the shots were to be prepared, the manner of firing, etc., with the mandate that if they were again violated it would result in the closing down of the mine.

These reports and investigations are given in the manner and time at which they occurred, and will be found in this report.

SHIELDS ON MINING MACHINES.

During the legislative session of 1908, the miners of the state, through their representative officials, secured the passage of some changes in the mining laws for which they are entitled to much credit. These changes in the law came into operation during the month of August, one of which pertained to the electric wiring of mines, and while the application of electricity and conducting wires were not definitely defined, discretionary power was vested in the Department to suggest such safeguards as the conditions required, which greatly aided the Inspectors in their work and enforcement of the orders of the Department.

During the year 1909 there were only two fatalities due to the use of electricity, both resulting from high voltage, as compared with five deaths from the same cause in 1908, while the tonnage increased 1,467,232 tons over that of the year 1908.

We regret to say that the most flagrant violations of the law compelling mining machines to be properly shielded emanated from the source whose representatives were responsible for its enactment, machine runners being especially opposed to the use of the shield, and persisted in operating machines without them. The violation of this law resulted in the arrest of Elmer Witchy, a machine runner, employed at the Knob mine, owned and operated by the Bakewell Coal Co., Belmont county, Ohio, for operating a machine from which the shield had been broken, causing the death of F. M. Lykes, his assistant, who was caught in the machine, dying from his injuries three days later. A warrant was sworn out for his arrest, and at the hearing he plead guilty to the charge of operating a machine without the proper shield, and was compelled to pay a fine and the costs in the case. A complete description of this accident will be found in the detailed description of fatal accidents in Belmont county. With a strict compliance with the requirements of this law many accidents are sure to be avoided.

THE USE OF COPPER TOOLS IN THE MINES OF THE STATE.

The law requiring copper tools to be used in mining coal in the State, passed by the State Legislature April 2, 1908, having become operative six months after its passage, a circular was issued by the Department on October 12, 1908, notifying operators and miners that copper needles and copper tips on tamping bars must be provided without any unnecessary and unreasonable delay. However, work was very slack during the year 1908, and miners were somewhat dilatory in complying with the law, as they considered it an unnecessary and useless one, claiming that it would work a hardship on account of the expense and make further inroads on their already depleted earnings.

Not being desirous of enforcing the law in an unreasonable and radical manner, on account of the condition of the trade during the year 1908, and the hardship it might work on many of the miners in the State, especially in the districts where work was unusually slack, the matter was left largely to the discretion and judgment of the District Inspectors, but as long as any room was left for a non-compliance of the law there was little disposition on the part of the miners to do so, and they failed to procure the necessary tools. It became necessary, in order to relieve the Department from any responsibility due to this non-compliance of law, to call a meeting of the Inspectors during the first part of the year 1909, and they were given instructions to enforce the law without further delay.

As soon as it became evident that the Department was sincere in its demands in having the law complied with, and that they would not be permitted to work in the mines until they were equipped with the proper tools, the miners took steps to secure them. Another and more serious difficulty arose from the enforcement of this order, and the attention of the Department was called to the inferior quality of the tools that were being supplied the miners by manufacturers, as they did not meet the legal requirements of the law, which required that tamping bars be tipped with at least five inches of copper, whereas many of the ones that were being sold to the miners were tipped with only one inch of copper, the remaining four inches consisting of an iron or steel bar threaded at the tamping end, and a thin coat of copper moulded around the threaded portion of the iron bar.

Immediate steps were taken by the Department in regard to this matter, and circulars issued to manufacturers and warning miners not to purchase inferior tools. Arrangements were also made so that tools which had already been furnished miners that did not come within the requirements of the law were to be returned and others supplied.

When the requirements of the law were fully understood by manufacturers there was no further difficulty, and the miners throughout the State are now equipped with these copper tools.

The same opposition encountered in enforcing the provisions of the new law in regard to shields on mining machines was also met in enforcing the law in regard to copper tools, many of the miners being opposed to their use, but we do not believe that since their installation there would be any disposition to return to the old tamping bars and needles. There is always more or less dissatisfaction manifest when any method different from an old and time-honored custom is being put into general use, no matter how superior the new may be, but when we take into consideration the dangers surrounding the handling and use of explosives in the mines, too many safeguards cannot be thrown about employees, and the superiority of these tools in lessening these

manifold dangers cannot help but be admitted by those using them in the work for which they were manufactured.

The following circulars and correspondence issued in regard to the law requiring copper tools and shields on mining machines are self-explanatory:

NOTICE—NEW LAW.
(To be Posted at Mines.)

STATE MINING DEPARTMENT
COLUMBUS, OHIO.

October 12, 1908.

To mine operators and miners:

The following act was drafted at the instance of the Ohio miners, and passed by the last session of the Ohio legislature, becoming a law on the 3rd inst:

AN ACT

Governing powder, and other explosives and blasting in coal mines.

Section 1. (Storing Blasting Powder or Other Explosives.) No blasting powder or other explosives shall be stored in any coal mine, and all powder sold to miners by the keg shall be packed in kegs which have an opening at the edge two inches in circumference, and that can be conveniently opened, to avoid the dangerous use of picks to open the same; and no workman shall have at any one time more than one twenty-five pound keg of black powder in the mine, nor more than three pounds of high explosives; and no explosive shall be taken into or out of any part of the mine in mine cars propelled by electric power; and no person shall keep blasting powder, or explosives, dangerously near the electric wire or power cable in any part of the mine where electric wires are in use.

(a) (Boxing and Distance.) Every person who has powder or other explosives in a mine, shall keep it or them in a wooden or metallic box or boxes, securely locked, and said boxes shall be kept at least five feet from the track, and no two powder boxes shall be kept within twenty-five feet of each other, nor shall black powder and high explosives be kept in the same box.

(b) (Handling Explosives.) Whenever a workman is about to open a box or keg containing powder or other explosives, and while handling the same, he shall place and keep his lamp at least five feet distant from said explosive and in such position that the air current can not convey sparks to it, and no person shall approach nearer than five feet to any open box containing powder or other explosives with a lighted lamp, lighted pipe or other thing containing fire.

(c) (Tamping.) In the process of charging and tamping a hole, whenever in the opinion of the mining department this becomes necessary, the needle used in preparing a blast shall be made of copper and the tamping bar shall be tipped with at least five inches of copper. No coal dust nor any material that is inflammable, or that may create a spark, shall be used for tamping, and some soft material must always be placed next to the cartridge or explosive.

(d) (Firing Shot.) A miner who is about to fire a shot with a manufactured squib shall not shorten the match, saturate it with mineral oil nor

ignite it except at the extreme end; he shall see that all persons are out of danger from the probable effects of such shot, and if it be a rib shot, he shall not notify the person or persons working next to him on said rib before said shot, and shall take measures to prevent anyone approaching by shouting "fire" immediately before lighting the fuse; no person shall return to a missed shot until five minutes have elapsed. And when it is necessary to tamp dynamite, nothing but a wooden tamper shall be used.

Section 2. (Penalty.) Any person violating any part of this act, shall be deemed guilty of a misdemeanor, and upon conviction be fined, not more than one hundred dollars, nor less than five dollars, at the discretion of the court.

Section 3. This act shall take effect and be in force six months after passage.

FREEMAN T. EAGLESON,
Speaker of the House of Representatives.

JAMES M. WILLIAMS,
President of the Senate.

Passed April 2, 1908.

Approved April 3, 1908, 9:50 o'clock A. M.

ANDREW L. HARRIS, *Governor.*

It is not necessary to say that the above law covers a number of very important points, which, if reasonably observed, may result in preventing much loss of life and injury to persons in mines. It is no hardship to any one, simply a little proper discipline and exercise of necessary care in handling explosives.

Clause (c) provides that: "Whenever in the opinion of the Mining Department this becomes necessary, the needle used in preparing a blast shall be made of copper, and the tamping bar shall be tipped with at least five (5) inches of copper."

The promoters of the law no doubt considered it essential that copper needles and tampers should be used as a safeguard against premature blasts, and loss of life or injury resulting to miners, and every inspector in the department is fully in accord with the law, hence this notice:

That copper needles and copper tips on tamping bars must be provided without any unreasonable or unnecessary delay, and the use of all other material as needles and tip ends of tamping bars dispensed with both by regular miners and by day men and any person or persons engaged in charging any hole, either in coal, rock, or any other material in any mine in the State except where the law requires that nothing but a wooden tamper be used to tamp dynamite charges.

(Signed)

GEO. HARRISON,
Chief Inspector of Mines.

STATE MINING DEPARTMENT, COLUMBUS, O.

March 13th, 1909.

To the District Inspectors:

Dear Sirs:

In looking over your daily reports, we notice that a great many mining machines are not equipped with shields to protect those working with them from contact with the chain while in operation.

It is not necessary to remind you that there is scarcely a mining village in the State where there is not one or more miners minus a limb, or other-

wise crippled, by being wound into the mining machine from accidental contact with the chain, to say nothing of the number of men who have lost their lives in that way.

The law to shield chain machines was enacted over ten months ago, and became operative over seven months ago, so that there has been ample time to provide shields.

The risk of being responsible for allowing mining machines to be operated without the chain being shielded on both sides is too great for this department to take; hence, if you permit one to be operated one moment after you are aware of the fact, without shields on both sides, and any accident occurs resulting in injury or death, you must assume the responsibility.

The law is clear and penalties provided. You cannot only prevent their operation, but you can, wherever you find one operating without shields, arrest and prosecute both the mine boss and the man who is operating the machine.

Enclosed find copy of letter sent to manufacturers of copper tools. Please act in accordance with its contents.

Yours truly,

GEO. HARRISON,

Chief Insp. of Mines.

STATE MINING DEPARTMENT, COLUMBUS, O.

March 13th, 1909.

To the Manufacturers of Copper Mining Tools:

Dear Sirs:

Prompted by a duty devolving on us to see that the laws of this State governing the operation of mines are reasonably complied with, particularly that part of the law designed for the protection of life, we again desire to call your attention to the law providing for the use of copper needles and copper-end tamping bars used by miners for the purpose of preparing blasts.

The law has been in operation since August 10th, 1908, and provides that nothing but copper needles can be used, and that the tamping bars (as stated in our letter of 5th inst.) shall contain not less than five inches of copper on

The wording of the law could not be made plainer, or the spirit, intent the end used for tamping a blast of powder.

and purpose more clearly set forth, but we find that instead of compliance with the law, it is flagrantly and openly evaded by some manufacturers, and the mine operators, retail dealers in mine supplies, and particularly the miners, are being outrageously imposed on by having foisted on them an inferior article that neither complies with the Ohio law nor will be of any service to those purchasing them.

Instead of the needle being made of entire copper and properly tapered from one end to the other, and smoothly finished, so that it can be easily withdrawn when the hole is tamped, many of them are made with a considerable portion of iron on the heavy end, united to the copper by electric weld, and they are rough and uneven in taper; and when the miner attempts to withdraw them they either break off at the weld or the copper twists in two, leaving a portion of the needle in the drill hole.

The tamping bars, instead of having five inches of pure bar copper at the tamping end, and being properly united by speltering process, many of them are simply an iron or steel bar threaded at the tamping end and a thin coating of cast copper run around the threaded portion of the iron and extended

an inch or two beyond the extreme end of the iron, the coating being in many cases not more than one-sixteenth or one-eighth of an inch of copper.

The law providing for copper tamping tools was drafted by the miners themselves, and they paid lobbyists to secure its enactment—conclusive evidence of their willingness to share in the expense necessary to reduce fatalities in the mines, and it is nothing short of bare-faced counterfeiting to put a mere gilding of copper over an iron bar and impose on the miners by selling it to them on pretense of compliance with the Ohio law.

The writer used copper mining tools for twenty years, and feels as though he knows something about what they ought to be, and we want to again advise manufacturers that this department will not enforce the copper tool law until it can be enforced without fraud or without local dealers and miners being imposed upon.

We also wish to add that we will not permit those counterfeit (so-called copper) tools to continue in use in the mines in this State, so the sooner the parties who have put them on the market recall them and replace them with the "real thing," the better it will be for all concerned. Recent and repeated complaints from our inspectors and many others about those inferior tools have forced us to this conclusion.

Very truly yours,

GEO. HARRISON,

Chief Inspector of Mines.

NOTE—The above letter is self-explanatory, and miners will please refrain from purchasing inferior copper tools. Where the proper tools cannot be secured, we will not hold the miners responsible until such tools are on the market.

GEO. HARRISON,

Chief Inspector of Mines.

STATE MINING DEPARTMENT, COLUMBUS, O.

April 26, 1909.

To Whom It May Concern:

There has been much trouble in securing copper mining tools for use in mines that would comply with the provisions of the mining law.

The law requires that the needle shall be of copper, but it is not necessary that the head or ring should be copper. If it is substantially united with the copper, and is serviceable, we do not object to an iron ring, and in that matter the dealers and miners who purchase those tools will have to judge for themselves.

The law requires that there shall be not less than five (5) inches of solid copper beyond the end of the tamping bar. We understand that there are a great many tools on the market that do not comply with the law, and will certainly have to be replaced with those that do. Samples have been sent to this office by:

BEALL BROS., Alton, Ill.,
WARWOOD TOOL CO., Wheeling, W. Va.,
SALEM TOOL COMPANY, Salem, Ohio,

all of which comply with the law, and are all the companies who have up to date supplied samples which are satisfactory.

These companies agree to replace all copper mining tools that they have supplied in Ohio that do not meet the requirements of law, with those similar to samples left in this office.

Very respectfully,

GEO. HARRISON,
Chief Inspector of Mines.

STATE MINING DEPARTMENT, COLUMBUS, O.

To Mine Operators, Mine Superintendents and Mine Foremen:

NOTICE.

May 31st, 1909.

Section 2 of the act passed May 9th, 1908, became law August 9th, 1908. and is as follows:

"In all mines where mining machines are used, each of said machines shall be equipped and provided with a sufficient shield as may be authorized by the State Mine Inspector, or his deputy, for the protection of those employed in or about the use or operation thereof; and said shield shall be kept in use constantly while said machine is under operation."

The maximum penalty for violation of the above section is one hundred dollars (\$100.00). Whoever operates a mining machine which does not thoroughly shield the operator and assistant operator from contact with the chain of said machine, and whoever in charge of a mine permits a mining machine which is not thoroughly shielded to be operated, is liable to prosecution under the above section. For purposes of prosecution under the above section, this Department will consider a person in charge of said mine as permitting a mining machine to be operated without being properly shielded when said person in charge has knowledge that a mining machine is being operated without a proper shield.

This Department, or the inspectors, is not responsible for the law, but all are thoroughly in accord with its provisions and are responsible to see that it is complied with. The Department has had a great deal of trouble in having shields provided, and has met with a great deal of opposition from many machine runners, and some companies and managers have been very dilatory about complying with the law. Inspectors have given orders time and again to have shields provided, with little effect, and machine runners were being wound into machines and crushed to death, until inspectors were compelled to stop the operation of machines unless shielded. In many instances when a shield is broken off, instead of having it replaced promptly, it is allowed to operate until the mine inspector comes around and orders its operation to cease until the shield is replaced. This is not only unnecessary, but dangerous, and makes it extremely unpleasant for the inspector.

After the receipt of this notice, any mine inspector finding a machine operating in any mine without the chain being properly shielded, will at once swear out an affidavit and arrest whoever is in charge of the mine, and the operator of the mining machine.

COPPER TAMPING TOOLS.

The law requiring copper tamping tools was passed April 2nd, 1908. This Department was not responsible for this law, but is also in accord with its provisions. While copper tamping bars were not on the market that com-

plied with the law, we declined to enforce the law, and exercised our influence to have manufacturers recall the inferior tools and replace them with good ones. Tools are now on the market, samples having been sent to this office by:

THE WARWOOD TOOL CO., Wheeling, W. Va.,
BEALL BROS., Alton, Ill.,
THE SALEM TOOL CO., Salem, Ohio,
THE MARTIN HARDSOCG CO., Pittsburg, Pa.

so there is no longer any excuse on that score.

The idea prevails amongst many individuals that shields on mining machines, as well as copper tools, are unnecessary, and that they are able to take care of themselves without their use, hence uniform action is necessary.

Every iron and steel needle must be taken out of the mines on or before the last day of June next, and no needle of any material used other than copper; and all iron and steel tamping bars must also be removed from the mine, and no tamping bar of any material other than five inches of solid copper extending beyond the end of the bar can be used, except a wooden tamper, and in tamping dynamite, nothing but a wooden tamper must be used.

The operators and their agent (the mine boss or man in charge) will be held responsible, and action for violation will be taken at once by the inspector.

GEORGE HARRISON,

Chief Inspector of Mines.

STATE MINING DEPARTMENT, COLUMBUS, O.

June 29th, 1909.

To the Manufacturers of Copper Tools:

Dear Sirs:

On the 31st of May we issued a circular, a copy of which was sent to your company, setting forth that on the 1st day of July every miner in the State must be provided with copper tamping tools. Our idea in setting the time a month from the date of the circular was to give your companies an opportunity to have those tools on the market.

When we had to take up the question of the inferior tools being issued by the manufacturers of those tools, we made it a point with your companies that those tools had been put on the market as a pretense of complying with the law, which they did not, and our understanding with you was that the inferior tools would be replaced with ones in keeping with the samples sent to this office.

We published the names of the companies who had sent samples here, with a view of posting the miners as to where they could secure these tools. We are very much disappointed in being informed in a number of instances that the tools are not being exchanged, and that in cases where they are exchanged it is after the miners or the local dealers have taken the matter up and considerable time has been spent in making the exchange; even at that, extra charges were made in some instances for the new tools.

Our understanding was that the companies would take up the matter with their local dealers, and wherever they had received orders, that the orders would be duplicated with new tools, so that exchange might be made with the miner. If this is not done, it is breaking faith with the Department, and

is very much of a disappointment to us. We trust that those tools will be supplied at once, because it is our intention to enforce the law; yet we are not disposed to enforce it in a way to extort exorbitant prices from the mine-owners for those tools.

Awaiting your reply,

Very truly yours,

GEO. HARRISON,

Chief Inspector of Mines.

There was also a misconstruction of the attitude of the Department set forth in the circular issued on May 31st to both miners and operators, which was brought to the attention of the Department in a written communication received from the Secretary of the Ohio Coal Operators' Association and the Secretary of the Hocking Valley Operators. Both the communications referred to and the reply are herewith published, and are self-explanatory. (G. H.)

OHIO COAL OPERATORS' ASSOCIATION.

Office of the Commissioner and Secretary.

502-3-4 New Hayden Bldg., Columbus, Ohio, June 19th, 1909.

Hon. George Harrison,
Chief Inspector of Mines,
Columbus, Ohio.

Dear Sir:

We beg to direct your attention to your circular of date of May 31, 1909, addressed "To Mine Operators, Mine Superintendents, and Mine Foremen," relating to the act of May 9, 1908, entitled "An act to protect the lives of persons employed in the mines of Ohio against the dangers of electricity and machinery, and providing penalties for violations."

In this circular of instructions to your inspectors it is provided:

"After the receipt of this notice any mine inspector finding a machine operating in any mine without the chain being properly shielded will at once swear out an affidavit and arrest whoever is in charge of the mine and the operator of the mining machine."

And again:

"The operators and their agent (the mine boss or the man in charge) will be held responsible, and action for violation will be taken at once by the inspector."

Whether so intended or not, the tone of your circular appears to convey to deputies and others the impression that operators of mines are purposely ignoring the requirements of the laws and tending to a spirit of antagonism between your deputies and the operators of mines that should not exist, and heretofore has not existed on the part of the operators, nor, as we believe, on the part of your deputies.

It further appears from the quotations taken from your order that an inspector immediately upon finding a machine in operation without the chain being shielded is to cause the arrest of both the company official in charge and the operator of the machine. If such be your purpose, we desire upon the part of the operating interests to inquire if you do not construe in connection with this act the provision of section 292, Revised Statutes of Ohio, relating to the duties of the inspector and district inspectors of mines in the enforcement of laws relating to your Department and to mining operations as follows, to wit:

"Should the district inspector find any of the provisions of this chapter violated or not complied with by any owner, lessee or agent in charge of any mine, he shall immediately notify such owner, lessee or agent in charge of such neglect or violation, and unless the same is within a reasonable time rectified and the provisions of this chapter fully complied with, he shall insti-

tute a prosecution under the provision of section 6871 of the Revised Statutes. The inspectors shall exercise a sound discretion in the enforcement of the provisions of this act, and if in any respect (which is not provided against by, or may result from a rigid enforcement of any expressed provisions of this chapter), the inspectors find any matter, thing or practice in or connected with any such mine to be dangerous or defective, so as in his opinion to threaten or tend to the bodily injury of any person, the inspector shall give notice in writing thereof to the owner, agent or manager of the mine, and shall state in such notice the particulars in which he considers such mine, or any part thereof, or any matter, thing or practice to be dangerous or defective, and require the same to be remedied."

The act of May 9, 1908, herein referred to is a part of the chapter to which section 292 belongs, and the provisions as to notice after the discovery of the violation applies to a violation under the act of May 9, 1908, as well as to other violations under this chapter. If this view of the law is correct, it would seem that your instructions to inspectors to "at once swear out an affidavit and arrest whoever is in charge of the mine, and the operator of the machine," is in derogation of the notice requirement.

Operators also complain that inspectors have assumed the authority to close a mine when in their judgment a violation exists. We are not advised that any order to this effect has been issued by you, but merely direct your attention to this matter to ascertain if verbal or other instructions have been given by you. While the laws provide for the right of an inspector to enter for proper and full inspection at all reasonable times, it is expressly provided that such inspection shall not unnecessarily obstruct the operation of mines.

It is the desire of mine operators in this state to observe all laws for the protection of their employes and their property, and to take every precaution, whether required by statute or not, to this end. The operators, however, desire to be treated fairly and at all times to be given an opportunity to correct any breaches of the law which may occur on their several properties, particularly when employes may be responsible for such violation, such as the removal of shields from chains as is sometimes done without the knowledge of the company's representative.

It occurs to us that the provision requiring notice of law infringements was placed in this statute for good and substantial reasons, and since penalties are provided they cannot be imposed until the official charged with the enforcement of the law shall observe the injunction laid upon him as to notice of any such violation.

May we request your views upon these questions?

Yours very respectfully,

H. D. MANNINGTON,

Commissioner and Secretary Ohio Coal Operators' Association.

F. S. BROOKS,

Secretary Hocking Valley Operators.

STATE MINING DEPARTMENT, COLUMBUS, O.

June 21, 1909.

H. D. Mannington, Secretary Ohio Coal Operators' Association, and F. S. Brooks, Secretary Hocking Valley Operators, Columbus, Ohio.

Dear Sirs:

We are in receipt of your letter of the 19th, in which you take exception to certain portions of our circular notice of May 31st ult., to mine operators, mine superintendents and mine foremen, and in which you quote your exceptions.

The act providing shields on mining machines came into operation August 10th, 1908, or over ten months ago. The act providing for copper tamping tools took effect October 3d, 1908, or more than eight months ago. Both those acts provide penalties for non-compliance.

The circular notice clearly sets forth the trouble our inspectors have had in securing compliance with the provisions of both acts, from a number of those in charge of mines, and from a number of machine runners and miners. It is also noted that inspectors have been exceedingly lenient in the enforcement of the provisions of these acts, and in consequence of their leniency in allowing mining machines to operate for a time without shields, both fatal and serious accidents have resulted, and the inspectors are no doubt held at least morally responsible.

Just before the issuing of the circular, one of our inspectors, talking to us by telephone, advised us that he had refused to give permission to operate a number of mining machines at one of the mines in his district, which were minus the shields, and the president and general manager of the company threatened to seek redress (not saying revenge) by appealing to Governor Harmon.

You complain about our purpose to arrest a man in charge of the property for violation of the law, where the law may be violated by employes without the knowledge of the company's representative. You will observe that we say in our circular:

"When said person in charge has knowledge that the mining machine is being operated without a proper shield."

If he is arrested, and it is proven that he had no knowledge of the fact, we do not see that he can be held responsible unless the machine had been operated without the shield a sufficient length of time in that condition, that in the performance of his duties he should have had the knowledge.

We notice your quotation from section 292 of the mining laws, and your reasoning from its provisions that the mine inspector has no jurisdiction only to go in and look around the mines, and even if he sees the grossest and most deliberate violations, and imminent danger to men or property, all he can do, or all he would have the right to do, would be to serve notice on the man in charge, to discontinue such violations. Under such an arrangement, all the man in charge would be required to do would be to discontinue the violation in question, and start a new one and wait for the inspector to come around and give him notice to discontinue that, and start a third time. Thus every law on the statute book might be ignored with the greatest impunity, and without fear of prosecution.

We have heard some very peculiar opinions regarding the Ohio mining laws, but we trust you will pardon us for saying that the one contained in your letter is without doubt the most unique, far-fetched and utopian con-

struction we ever knew applied to them. At first, we were disposed to treat this definition as a huge joke, perpetrated on the two writers of the letter, on the chief inspector of mines, by some witty humorist or willful wag who was more encumbered with surplus time than onerous duties, but out of his regard for the Ohio mine operators, and particularly the two writers, we have given it more serious consideration.

We feel very sure, however, that there is not five per cent. of the coal producers of Ohio, that would want to have their mines operated under a such loose system as your definition of the law would inaugurate.

Contemplating that the inspector may fail in the performance of his duty, your quotation from section 292 commands that:

"Should the district inspector find any of the provisions of this chapter violated, or not complied with, by any owner, lessee, or agent in charge of any mine, he shall immediately notify such owner, lessee or agent in charge, of such neglect or violation, and unless the same is within a reasonable time rectified and the provisions of this chapter fully complied with, he shall institute a prosecution under the provisions of section 6371."

There is no provision in any part of the Statutes, however, that he shall not or may not prosecute for violation or non-compliance with law, even without ever giving notice, only in the same section where the law is too stringent or where there are conditions and no law to apply, then a written notice is required to make the inspectors' order, law.

You have evidently overlooked, as you have failed to quote from sections 295, 296, 297, 298, 299, 300 and other sections, where the owner, agent or manager of a mine is required to do certain important things, and we would ask your attention to these sections, and your definition of them.

There have never been any orders given by this department to the district inspectors to shut mines down, or to "unnecessarily obstruct their operation." Their duties are defined by law, and they are responsible for their own acts, and unless we are called on for advice or assistance, or called on by operators or miners, we have no jurisdiction.

The words, "necessary or unnecessary obstruction" are susceptible of a very wide range of favorable or unfavorable criticism, and depend much from whom such criticism emanates. The good judgment of an inspector should prompt him to avoid any unnecessary obstruction of work, and we feel that in the interests of both operators and miners, this is always done. When the inspector finds conditions in a mine that require changes, he is not calculated to order the men out and shut the mine down in that way. It is his duty to consult with the man in charge, and if possible, rectify the wrongs without interfering with the operation. If that cannot be done, then it is his duty to require the man in charge to reduce the number of men, or to cease operation, as the case may be, and as necessity may require. If this is termed "closing the mine," then we suppose all the inspectors will have to plead guilty.

You say:

"It is the desire of mine operators in this state to observe all laws for the protection of their employes, and their property, and to take every precaution, whether required by statute or not, to this end. The opera-

tors, however, desire to be treated fairly, and at all times to be given an opportunity to correct any breaches of the law which may occur on their several properties."

If this is the desire of the operators, and they observe the law to the extent of a reasonable compliance with it, they have nothing to fear. This department will guarantee them "fair treatment," but we cannot promise that they can ignore and violate the laws, waiting for the inspector to come around to tell them to "be good," and they will forgive them for past offenses.

The laws are based on the operation of mines, and it is the duty of operators to assume their share of responsibility in seeing that they are reasonably complied with by their own management, and by their employees.

There was no intention to mislead, or to convey any wrong impression about the law-abiding disposition of the Ohio mine operators. We have always felt that the most of the operators and mine managers desire to see their mines in the best possible condition, and to that end encourage and give all possible aid to the inspectors. As a whole, we have reason to believe that there are no mine operators in the country more wishful to surround their employes with the safest and most healthful conditions, or more willing to comply with all the requirements of the mining department than the Ohio operators, but by a few men in charge of mines, a few machine runners and a few miners, the patience of the district inspectors was simply worn out by disregard for the provisions of the two acts herein named. We were appealed to by the inspectors, and after consultation with and approval of the legal department of the state, we issued the circular notice on May 31st, and calculate that the inspectors will fully comply with its provisions and those that desire law, discipline and safety in their mines, should be the first to give their approval and aid to the inspectors. It is the few, not the many, that the circular refers to.

Hoping that this explanation will make clear beyond the possibility of misconstruction, the disposition and position of this department.

Very respectfully yours,

GEO. HARRISON,
Chief Inspector of Mines.

INVESTIGATION OF THE CLIFFORD MINE, BELMONT COUNTY, O.

On account of the power house and steam boilers being located fifty (50) feet from the mouth of the Clifford mine, and located between the railroad and river bank, whereas the law requires that they should be located not nearer than sixty (60) feet from the opening of any mine, the department was called upon to make an investigation to ascertain what provisions could be made in order that employes of the mine would be protected against danger from fire, and so the company would not be compelled, at great expense, to reconstruct these buildings as well as the foundation of an additional steam boiler, which had already been built.

The investigation was made in company with L. D. Devore (in whose district the mine is located), Lot Jenkins and Thos Morrison, and conditions under which they were permitted to carry out their plans were submitted to the company, of which the following is a copy:

REPORT OF INVESTIGATION OF "CLIFFORD" MINE, FT. PITT COAL CO., SEPTEMBER 15TH, 1909, BY GEO. HARRISON, CHIEF INSPECTOR OF MINES; L. D. DEVORE, INSPECTOR TENTH DISTRICT; THOS. MORRISON, INSPECTOR NINTH DISTRICT, AND LOT JENKINS, INSPECTOR EIGHTH DISTRICT.

September 15th, 1909.

In company with Chief Inspector Geo. Harrison, Lot Jenkins, inspector of the eighth district, and Thos. Morrison, inspector of the ninth district, we visited this mine by arrangement with Mr. A. R. Budd, president of the Ft. Pitt Coal Co., in regard to the erection of an additional steam boiler. The main opening is a slope opening, with brick arch a considerable way down and not a single timber in it, and is about 170 feet above the coal; was opened in the early days of mining for river shipment, having been abandoned for many years. The Ft. Pitt Coal Co., securing the necessary rights from the owners of the property, reopened it in 1907, and equipped it with modern mining machinery. The slope mouth is located at the foot of the hill on the river bank, and the approach to it is through a trestle work underneath the Pennsylvania Railway, which runs at right angles with and in front of the slope opening and about 10 feet from it.

The power house and steam boilers are about 50 feet from the slope mouth and located between the railroad and river bank. The question arose as to the steam boilers and buildings containing the boilers being too near the opening, as provided in section 299 of the mining laws, and the danger of fire; hence the inspection.

We found that on account of the close proximity of the main line of the railroad, and a series of slips along the river bank, that there is no other available location for the steam boilers and power house than the present structure already erected, and in consequence grant permission to the Ft. Pitt Coal Co., to erect an additional steam boiler on the site or foundation already provided for that purpose; provided, however, that they proceed at once to prepare and provide a third opening for this mine, and continue the work faithfully until completed, thus providing two separate and distinct lawful means of ingress and egress independent of the main slope opening in question, maintaining a good stairway as at present in the present second

opening where the ventilating fan is placed, and providing and maintaining a good step-ladder or other safe means of escape, in case of emergency, at the projected third opening, and also provided that the man in charge be instructed to at once stop the ventilating fan at the present second opening in case of fire in any of the buildings located near the main slope opening referred to in this report.

Unless the conditions herein contained are accepted, complied with, and fully maintained by the Fort Pitt Coal Co., the provisions of section 299, regarding the location of steam boilers and buildings will be in force.

L. D. DEVORE,

Mine Inspector Tenth District.

Approved:

GEO. HARRISON,

Chief Inspector Mines;

LOT JENKINS,

Mine Inspector Eighth District;

THOMAS MORRISON,

Mine Inspector Ninth District.

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INVESTIGATION OF THE CLIFFOP

OWNED AND OPER-
COLUMBUS, O.

On account of the por-
feet from the mouth
and river bank, whe
nearer than sixty
was called upon to
be made in order
ger from fire, a
to reconstruct
steam boiler

The in-
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REP

... was called upon during the latter part of the year to de-
... the New York Coal Co., and its employees at
... in Athens County, O., in regard to a changed method
... by the company, the employees claim-
... the law; the department maintaining
... to prevent the new system of
... did not allow working places to be driven
... a break-through or airway. But
... the department of the at-
... providing the company did
... the lawful distance in advance of a break-through or airway. But
... that there might be no error of judgment, the department of the at-
... was consulted, and an opinion rendered verbally,
... the position taken by the mining department.
... seemed to exist dissension and distrust in the ranks
... the matter might be still further considered,
... in the office of the mining department at which they
... the counsel of the attorney general might be
... and their representatives and the outcome of which is contained in the
... The meeting was held, the outcome of which is contained in the
... following opinion of the attorney general:

STATE MINING DEPARTMENT, COLUMBUS, O.

September 23, 1909.

New York Coal Co., Columbus, Ohio.

Dear Sirs:

We have just received an opinion from the attorney general on the ques-
tion submitted to him pertaining to the new method of mining introduced at
the New York Coal Co.'s No. 31 mine, of which the following is a copy:

"Columbus, Ohio, September 20th, 1909.

"Hon. George Harrison, Chief Inspector of Mines, Columbus, Ohio.

"Dear Sir:

"Section 298, Revised Statutes, is in part as follows:

"The owner or agent of every coal mine, . . . shall provide and
maintain for every such mine, an amount of ventilation of not less than
one hundred cubic feet, per minute, per person, employed in such mine,
. . . and no working place shall be driven more than sixty feet in
advance of a break-through, or airway;"

"There having been some controversy as to whether the New York
Coal Company at its mine No. 31, was violating the above provision, a
hearing was had in this office with Mr. McManigal and Mr. Morris, repre-
senting the coal company; Mr. Green and Judge Wright, representing the
miners, and Hon. George Harrison, chief inspector of the mine depart-
ment; all the parties interested in the above controversy being present.
From the facts submitted to this department at the above hearing, I am
of the opinion that the New York Coal Company, at its mine No. 31, did
and at the present does provide and maintain an amount of ventilation of
not less than one hundred cubic feet, per minute, per person, employed in
such mine, and also that they do not violate the latter part of the above
quoted section, to-wit:

"No working place shall be driven more than sixty feet in advance of a breakthrough, or airway."

by having their breakthroughs, or airways, one hundred and twenty feet apart alternating on each side of a room or working place."

I beg to remain,

Very truly yours,

"U. G. DENMAN,

"Attorney General."

Very respectfully,

GEO. HARRISON,

Chief Inspector of Mines.

PICK MINING VS. SOLID SHOOTING, OR BLASTING COAL OFF THE SOLID.

Under the caption of "Pick Mine Coal" in this report, 4,609,172 tons of coal were reported as being mined during the year, but in reality it should have been given under the heading of "Powder Mined Coal."

Where coal has not been undercut by mining machines, it has been the custom to designate the product as "Pick Mined Coal," but there is no longer any pretense to undercut and sidecut coal as was the practice in the days of general pick mining previous to the advent of mining machines, and, comparatively speaking, real practical pick miners are few and far between as the surviving veterans of the Civil War of nearly fifty years ago, and their number is fast growing less. Instances can be cited where circumstances temporarily prevented the operation of mining machines, necessitating machine runners and loaders to remain idle until some old practical miner was secured to relieve the situation. This is gradually becoming the case; the most of the present-day miners neither can or will cut coal by the old method; and we do not blame them, as many of them would wear out more work gloves than they could earn money to purchase while acquiring the skill and art necessary.

The present system of producing coal in so-called "pick mines" is becoming so fraught with danger, and the liability to serious calamity from dust explosions so imminent that many of the present methods can no longer be tolerated, and coal must either be properly and fully undercut, or safer methods adopted.

The Mining Commission took up this matter and the general sentiment prevailed that all coal should be undercut that could be, either by machines or by hand pick, but the conditions in the solid shooting districts are so varied that it was found difficult to deal with it by any uniform recommendations, and the members of the Mining Commission were of the opinion that the Mining Department could better regulate it so as to remove the danger to a minimum without inflicting unnecessary or serious injustice on either the operators or miners where it was practiced.

Instead of cutting and preparing the coal so as to use the least quantity of powder, and producing good marketable coal, large gauge deep auger holes are bored in many instances ten and twelve feet into the solid coal, and blasting powder, as it were, is exchanged for a pile of pulverized coal and slack.

Where the blasting is done during the day the heavy shots constantly interrupt the air current and fill the mine with smoke and dust from blown-out shots endangering the lives of the men as well as the property. In most instances, however, the shooting is done at quitting time, and just as soon as the firing time arrives, the cannonading commences; the firing is done mostly by fuse, and in rapid succession, the concussion bursting out stoppings and tearing off doors, reversing the air current; men are thrown down in their mad rush to get out of the mine for safety, and are becoming so alarmed at the danger that they freely confess it and are demanding shot firers to relieve them of danger and assume the risks.

On December 16, 1909, two shot firers were killed in the Delmore mine in Columbiana county, a complete report of which will be found on pages 54-56.

The letter signed "J. H. Berry," which appeared in the Leetonia Reporter, is self-explanatory. The facts and circumstances surrounding this deplorable calamity and controversy are given in order that all may judge for themselves.

From the fact that still another explosion followed in quick succession the one here recorded, at the same mine early in January, 1910, in which another shot firer lost his life, the investigation and report of the entire matter is included in the report of the year 1909, as the data would not be complete without both

G. H.

EXAMINATION OF THE "BIG WALNUT," "McNAB" AND "DELMORE"
MINES, FOR THE PURPOSE OF DETERMINING THE RELATIVE
CONDITIONS AND METHODS OF MINING AND BLASTING THE COAL.

(By Alexander Smith, W. H. Miller and Thos. Morrison, District Mine Inspectors for 6th, 7th and 9th Districts, respectively.)

September 11, 1909.

Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio.

Dear Sir:—Having been requested by the officials of the U. M. W. of A. and the owners of the "Big Walnut" mine to accompany them on an investigation to ascertain the existing conditions of the "Big Walnut" mine and the relative conditions of adjacent mines, we beg to submit the following report:

On the 9th day of September we met the above-mentioned parties and proceeded to make an investigation of the Big Walnut and two adjacent mines, namely, the McNab and Delmore. Two days were spent in this work and a very thorough investigation made.

Our object was to determine whether the conditions in these mines were similar or not. On investigation we found very little difference—the system of mining is practically the same. There is no difference in the nature of the coal, as far as we could determine. Some parts of the mines were dry and dusty and others wet, the same as can be found in any other mine or mines.

We also found that in blasting the coal, great quantities were pulverized and blown back in the gob and along the roadways, while the coarser coal was generally cleaned up. The fine coal or dust was left where it was blown by the shots, and in most cases was very dry.

This system of mining the coal is very reckless as well as dangerous, as practically no undercutting is done. Holes are recklessly placed and are charged with dangerous quantities of powder.

In some instances we found holes drilled and charged one behind the other, which is a very dangerous practice, and liable to cause an explosion at any time should the shot in front fail to go off first.

We feel that under the system of mining practiced in this locality, with the reckless and excessive use of powder, that we do not consider it safe for anyone to be in the mine while the shooting is being done. Furthermore, we believe that if life and property have to be protected, as they should be, some steps ought to be taken to prohibit this reckless and dangerous method of producing coal.

There was a time in the history of coal mining when miners used to take great pride in preparing coal before blasting, and operators encouraged this class of miners, as they produced a good grade of coal. At this time there was practically no demand for fine coal, hence they were desirous of obtaining as much lump coal as possible. But conditions began to change. A market was found for the fine coal; powder came more into use; drilling machines were introduced into the mines, and miners commenced to realize that they could produce more coal by using greater quantities of powder and doing less mining. While this coal was of an inferior quality, and more of it went through the screen, still the miner found that he could make money easier this way, and the operators encouraged, or at least did not try to prevent, this system, as it increased their percentage of fine coal. Both miners' and operators' interests were the same, as they found that they could both make more money under this system; so it continued without either party realizing that they were gradually creating a dangerous condition which would, and finally did, end in disaster and great loss of life. For a time, it was not understood what caused these disasters, and these explosions were attributed to explosive gases, but

experience has fully demonstrated that shots fired in dry mines, especially the kind of shooting done in the Washingtonville district, is liable to cause an explosion at any time.

We believe that the miners and operators ought to get together, as their interests are mutual, and decide on some safe and sensible method of mining or producing coal, and would recommend that the coal be undercut, so that it could be blasted down with reasonable safety.

We feel that if something is not done to change this dangerous system, that grave results are liable to follow, as the experienced miners are becoming fewer year after year, and the inexperienced miners either do not realize the danger or are more reckless in their methods and have less regard for their own safety and the safety of their fellow-workmen.

Notwithstanding the recent enactment of law, we found that men were tamping holes with dummy cartridges filled with drill dust.

Respectfully submitted,

ALEX. SMITH,

Inspector District No. 6.

W. H. MILLER,

Inspector District No. 7.

THOS. MORRISON,

Inspector District No. 9

STATE MINING DEPARTMENT.

Columbus, Ohio, December 27, 1909.

The Delmore Coal Co., Cleveland and Leetonia, Ohio.

Dear Sirs:—We have just completed a report of the recent inspections of your Delmore mine, covering in detail our findings as to the explosion, December 16, 1909, and in said report we have given certain orders which we expect you to put into effect. If any arrangements are entered into by your company as to shot-firers, it must be specifically understood that our orders must be carried out, and whoever does the firing of shots must allow sufficient time to elapse between shots to eliminate danger from over-shooting. As our orders are to you, we must look to you and hold you responsible for the enforcement of all orders emanating from the department.

Yours truly,

ALEX. SMITH,

Inspector 6th District.

THOS. MORRISON,

Inspector 9th District.

Approved:

GEO. HARRISON,

Chief Inspector of Mines.

STATE MINING DEPARTMENT, COLUMBUS, OHIO.

December 27, 1909.

Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio.

Dear Sir:—We herewith submit the following report, covering three visits to the Delmore mine in Columbiana county, after the explosion which occurred on the 16th inst., and in which Geo. Greenwalt and Wm. Keene, two shot-firers, lost their lives.

Our first visit was on the morning of the 18th, and we found the bodies of the two men had been recovered at the rope haulage passway, about 1,200 feet from the main opening, but on account of the destruction of the ventilating fan and the total destruction of an overcast and large number of brattice stoppings, we could not proceed any further than that point, and had to defer inspection until a new fan was secured and stoppings repaired.

Accompanied by yourself, we again visited the mine on the 20th, with the same result. In an interview with the mine superintendent and mine committee, as well as a number of the miners, we found that shot-firers had been employed on the 13th, the miners positively refusing to work another day unless shot-firers were employed by the company, stating they were afraid of the heavy shooting. The superintendent yielded to the demand, but stipulated that one-third of the coal must be undercut, many of the miners refusing to undercut it, and some of them even returning home rather than do so. This statement was assented to by the miners. No arrangements were made as to whether the shot-firers were to have any jurisdiction in regard to the firing of what they might consider dangerous shots, either from the manner of how the holes were drilled, the charge of powder, or whether they were to see the charge or tamp the holes, and it was stated that the general custom was for the miners to tamp their own shots where they were dry, and where wet to leave the powder and tamping ready, and shot-firers to do the tamping.

On the 27th, again accompanied by you in a thorough examination of all the working places (nothing having been disturbed, only the stoppings being replaced between the airways), we found in the fourth left entry, where there were eight rooms and the entry working, that no shots had been fired on the fatal evening of the explosion. The force of the concussion had driven loose material towards the face of the entry. Next, we examined the main entry, where two men had worked in the entry and one in the air-course. No shots had been fired there. That there had been much force from the air-course to the entry and out over on the return was visible. The next entry explored was the fourth right. No shots had been fired in the working places in this entry, but a number of kegs, containing powder, had been exploded, presumably by the flame from the initial explosion, and which had evidently given much force to it, as much destruction was done, and the force had been first inward and then outward.

The third right entry was next entered and explored; there it was found that all the shots had been fired, the firing commencing at the head of the entry, leaving the shots in the rooms nearest the main to be fired last, and as conditions would indicate that the explosion was caused by the firing of two blown-out shots in the No. 5 room, it is an evident fact that one of the shot-firers lit these shots, while the other lit the two shots in the No. 2 room, and then both retreated to the main entry, there to wait for the four shots to go off. This would account for the bodies of the shot-firers being found on the passway which is located on the main entry. All the shots in this entry must have been fired in a very short space of time, as stipulated time for firing was 3:40 p. m., and the explosion occurred at 3:45 p. m.

The rooms between No. 2 and No. 5 were abandoned. It was here that the greatest evidence of fire was discovered, and as there was no evidence of this kind beyond the No. 5 room, it is a conclusive fact that the explosion took place at this point, traveling against the air, which was in the direction of the No. 2 room, and then towards the No. 4 right entry, where the kegs of powder above referred to were ignited, greatly intensifying the force of the explosion.

As previous reports will show, this department has always been opposed to this reckless system of producing coal, namely, shooting it off the solid, when it can be undercut; and, realizing as we do the danger to life and property, and as there is no law on the statutes to regulate or prevent such reckless and dangerous methods, and as we have frequently requested that the miners and operators adopt some safer method of mining coal and they have failed to take any action to protect themselves or their property, we feel that if these disasters are to be averted in the future there must be some restriction governing the blasting of coal, especially where it is of such a brittle nature as the No. 3 seam; therefore, the following orders must be complied with:

(1) That the mine must be kept free from dust, and sprinkled, as required by law.

(2) That no shot shall be fired unless at least one-half of the coal is undercut, and no hole be drilled beyond the undercutting; in narrow work, no hole shall be drilled beyond the shearing, and no hole shall be tamped with other material than that prescribed by law; and no person shall be allowed to fire a shot unless he tamps, or sees same tamped, and has a knowledge of the contents of the hole and the manner in which it was drilled.

(3) That in the firing of shots, a sufficient time shall be allowed to elapse between shots to allow the temperature to decrease, and smoke clear away, before other shots are fired.

Very respectfully,

ALEX. SMITH,
Inspector 6th District.
THOS. MORRISON,
Inspector 9th District.

Approved:
GEO. HARRISON,
Chief Inspector of Mines.

Note:—As a series of tests made by experts of the federal government at their testing station at Pittsburg, and tests made in the older mining countries of Europe, have demonstrated that the use of black powder, in the presence of gas or dust, especially where coal is not properly undercut and heavy charges are used, is a dangerous factor in coal mining, as a protection to life and property we would recommend and advise that the use of permissible explosives, as recommended by the federal government, be adopted as a precautionary measure. In using these explosives, we would advise that some one familiar with handling them be obtained to instruct the miners how to prepare and charge the holes, until they become familiar with these new explosives and the dangers incident to their use.

[Leetonia Reporter.]

"MINERS' SIDE OF STORY."

A Washingtonville Miner Gives His Views as to the Cause of the Delmore Explosion.

Washingtonville, January 10, 1910.

Editor of the Reporter:

The year 1909 has now passed into the annals of time, with its many blessings, errors and accidents, faults and crimes, and we have just got far enough

into the year 1910 to realize how difficult it is to carry into effect all the good resolutions we were going to observe this year. Without doubt many good intentions and resolutions are carried into practice and effect, and if we all had the will power to carry out our good intentions and resolutions the year 1910 would make this place a happier and better place in which to live. But although there are many of our good resolutions broken, it is at least better to have made and broken them than not to have made any at all. The great trouble is there are so many that never form any good resolutions.

Of the many accidents, disasters and casualties of the year 1909, I would call the attention of your readers to the terrific explosion that occurred at the Delmore mine a few short weeks ago. Two men, shot firers, lost their lives, both good men and respected by all. The power of the explosion was something terrible, and the mine, literally speaking, was a fiery furnace after the explosion.

As to the cause and the report of chief mine inspector of mines and mining, George Harrison, I would call attention. After an examination of the mine by the inspectors, Chief Inspector George Harrison is reported as saying the explosion was caused by one Charles Buckley preparing too large a shot, and if he had the doing of it, union or no union, Charles Buckley would not be allowed to enter a mine again. And he was very emphatic in his remarks clearing the company from all blame. There were two shots in Charles Buckley's room, which this inspector said filled the mine with dust.

That might satisfy the public as to the cause, but is the merest rot and nonsense to the miners. If the two shots fired had blown all their coal into dust, it could not have filled the mine with dust. Charley Buckley's shot was not larger than many shots prepared by other men, and the facts of the matter are Charley Buckley's shot was an under-charged shot, for which we might do him an injustice were we to say Charles Buckley was to blame.

The most careful are subject to the same mistake in judging the amount of powder that will shoot a shot one time, through conditions such as a jump down, or an extra amount of sulphur, will make a blown-out shot, which is more disastrous than a shot having too much powder; and an inspector nor no one else can always see and know the conditions of all shots and know the amount of powder required through those conditions. It is the height of presumption for Chief Inspector Harrison, or anyone else to place the blame on one, let alone interfering with any man's opportunity of obtaining a livelihood.

We see from time to time reports of explosions being caused by over-charged shots. Chief Harrison could not report it an overcharged shot, as he reported over six feet of the hole remaining intact, and as there appears to be no such thing as an undercharged shot in his category of knowledge, he said too big a shot, and I suppose this will be his report to the governor of Ohio. The miners of the No. 3 vein of coal should defend Charles Buckley and draw up petitions of protest and file them with the governor.

As to his report. Talk about gray matter and intellect. If this is the wisdom of gray matter, if this is the intelligence accruing from intellect, good Lord, protect us from its influences and remove it from the head of the mining department, and give us instead some experienced, practical fellow. While he may not be a golden rule man up to the extent of Thomas Johnson, he may at least realize that there is such a thing as a golden rule that trifling with a man's chances of obtaining his bread and butter is considered a crime.

There have been a number of explosions at this mine from time to time, gaining in strength and violence, until the miners became alarmed, and demanded the company to give them shot-firers. The company conceded to the

demand and those two unfortunate men were employed to fire shots. V is to be deplored that two fellow-men and beloved companions have, as I sacrificed their lives, has the community nothing to be thankful for in k that had this explosion occurred but three or four days before, or had she not been employed, half a hundred miners would have been roasted of two?

There were several explosions following each other. Just which one their death will never be known. The first explosion, through prevailing tions, was carried to other places where there were some kegs of powder were heated until they exploded, causing a more violent explosion than ti Such, Mr. Editor, is the opinion of our miners. Some people think the of miners does not amount to much in such cases.

"I have always had complacent confidence in Chief Inspector George rison, but in the present instance I cannot help but conclude he is at fault

Respectfully yours,

J. H. BERRY.

STATE MINING DEPARTMENT, COLUMBUS, OHIO.

January 25, 19

Editor Leetonia Reporter, Leetonia, Ohio.

Dear Sir:—I have just received a copy of your issue of 14th inst., in there appears a communication signed J. H. Berry, purporting to critic -report of myself as chief inspector of mines on the investigation made i unfortunate calamity which resulted in the death of two shot-firers at I mine.

Mr. Berry's criticism is somewhat premature, or misdirected, as I h: yet made any report or written anything on the subject. I have, howeve fully indorsed the report of the district mine inspectors, Mr. Smith a Morrison, whom I assisted in making the investigation, and have approve report over my signature.

Mr. Berry, in concluding his letter, says:

"I have always had complacent confidence in Chief Inspect Harrison, but in the present instance, I cannot help but concl is at fault."

Let me say in reply to that statement, that I appreciate the confid Mr. Berry, or anyone else, and desire to retain such confidence if I can by a conscientious and fearless performance of duty—not otherwise.

Another thing I wish to impress on Mr. Berry's mind is that it does quire the wisdom supposed to result from gray hairs to convince me t should not condemn our bitterest enemies, much less those in whom v implicit confidence, until we are sure they are at "fault."

Mr. Berry, speaking of the explosion, says:

"The power of the explosion was something terrible, and th literally speaking, was a fiery furnace after the explosion."

This, Mr. Berry certainly is mistaken in. There were no indica fire only at a point in the 4th right entry, where some powder had b

ploded, and in the 3rd right entry, in the two vacant rooms between the No. 5 room, where the two blown-out shots were found, and the No. 2 room, where the two shots had been fired simultaneously with the blown-out shot.

If the mine had been a "fiery furnace," the fuse connected with the charge in every hole would have been ignited, and every shot would have been fired. Not one shot was fired, only those fired by the shot-firers, and in a number of places, powder and loose cartridges were found standing just as left by the miners. We were also informed that the bodies of the two shot-firers bore no signs of burning. It was the concussion from the unreasonable and unnecessary heavy charges of powder, and from the two blown-out shots in No. 5 room that raised the dust and a simultaneous firing of the two shots in No. 2 room which caused the terrific results.

Every practical miner knows that the usual cause of a blown-out shot is because the charge of powder contained in the drill-hole is insufficient to remove the coal that is sought to be removed by it, and as a natural consequence, it has to seek the point of least resistance, blowing the tamping, emitting a fiery flame, the elongation of which is limited only by the amount of powder contained in the hole, and leaving the coal unremoved.

I am sure everyone who examined the two holes in No. 5 room, and noticed the direction in which they were drilled, and the depth they were drilled, will admit that if the holes had each contained 25 pounds of powder the result would have been the same—a blown-out shot.

On December 20th, when we visited the mine in company with the district inspectors, and met the management of the mine and mine committee, and a goodly number of miners, they all admitted that on the 13th of the month they refused to work any longer unless the company employed shot-firers, even refusing the request of the superintendent to wait another day and investigate conditions under which shot-firers were employed at other mines in the district, which if they had done they would have learned that shot-firers were not allowed by the Mining Department to fire shots, unless coal was partially undercut, and that they must supervise the manner in which holes were drilled, and the amount of powder they contained, having jurisdiction to refuse to fire an improperly drilled or overcharged hole. The men clearly and frankly admitted that they were afraid to fire their own shots, and many of the men also refused to undercut any part of the coal.

On the 27th of December, after the district inspectors and myself, with several others, had explored the mine and located the cause of the death of the two shot-firers, we returned to the surface, and found quite a number of the miners, evidently waiting in the boiler room to learn the result. I mentioned the names of two men and asked if they were present, and on being answered in the negative, said I regretted that they were not present, as I would like to have had the opportunity and satisfaction of saying to those men that "no person who drilled holes as unskillfully as the holes drilled in their rooms, charged and left for other men to fire, could work in any mine I had charge of, union or no union."

I counseled those present regarding the reckless method of producing the coal, and cautioned them that while they had good officials, no trades union leader could sustain men in such dangerous acts as they were indulging in. I meant just exactly what I said, and have nothing to withdraw.

It may be a consolation to Mr. Berry and others that they were not the shot-firers at this mine, but we should not forget that those two men whose lives were sacrificed were just as near and dear to their loved ones as any other bread-winner in the community. There is no logic in Mr. Berry's appeal to

"be thankful that more lives were not lost," when two men have unnecessarily sacrificed their lives through needless dangers, produced and prepared by the wanton carelessness of others, or no force in the sentimental argument of "taking away the chances of obtaining bread and butter" when the methods by which such bread and butter is obtained are as far wrong and as unnecessary as they are fruitful in making widows and orphans of the wives and children of fellow-miners.

Those who cannot perform their labor in a mine in a more skillful and careful manner, with less dangers to others, should certainly seek employment at other vocations.

The method of producing coal at the Delmore mine, as we found it, and the dangers incident to it when practiced at Delmore or any other mine, is without doubt a disgrace alike to miners, mine managers, and those who own the property. The practice is born of a desire on part of miners to burn the coal out with powder rather than apply the necessary skill and muscle to undercut and prepare it.

Mine managers and owners of mines, in many cases, permit it, making the appeal that miners refuse to prepare the coal, and are sustained by their trades union, but there are other reasons that they are not always willing to admit. They profit largely by the increased sales of blasting powder, necessary in solid shooting, and also by the much greater per cent. of fine coal produced by solid shooting that runs through the screen, for which the miner is not paid anything, and is a valuable market commodity to the mine operator.

Shot-firers, instead of carefully going about their work, seeing that the coal was partially undercut, holes properly drilled and charged, and tamping the holes themselves, and allowing time between blasts to permit the heat, smoke and dust to clear away, had everything ready to ignite the fuse when the miners left the mine, and evidently tried to see how many shots they could fire in the shortest possible space of time and get out of the mine, doing the work in about one hour that ought to have at least required five or six hours.

I am certainly not thin-skinned enough to take any offense at Mr. Berry's hasty criticism, and would not under any circumstances take any part in any unfriendly controversy on the subject as to methods of mining in Columbiana county, but it is safe to predict that if they wish to avoid a wholesale slaughter of miners they had better arrange to make mutual sacrifices and change the destructive and dangerous methods now employed.

We herewith enclose you a copy of the report made to this office by Inspectors Smith and Morrison, and approved by myself, and also copies of articles taken from annual reports as far back as 1904, all bearing on the system of mining coal in your county, and which show the position this Department has taken at all times on the question. If you deem them of sufficient importance to be of interest and benefit to those engaged in mining you can use them as space will permit.

Very respectfully yours,

GEO. HARRISON,
Chief Inspector of Mines.

(The following article is taken from the Chief Mine Inspector's Report for 1904.)

"FAST SHOOTING."

In the Salem, Leetonia and Washingtonville localities the coal is mined on a run of mine basis (the only district in the state employing this method). Solid shooting or blasting off the solid is the regular custom, and is practiced to the fullest extent. At the time examination was made there was not an inch of the coal that was undercut, and no pretense was made to do so. In fact, we were informed by miners that it was impossible to undercut it with hand picks, and that unless they were permitted to blast off the solid it would have to stay in the ground or be cut by mining machines.

Very heavy charges of powder are used and the blasting is done with about four or five feet of patent fuse in order to allow the miner to get a safe distance away from the blast, the force of the concussion sometimes bursting wooden brattices, stoppings and doors from their places and tearing roadways up and doing considerable damage to a mine.

After several weeks of idleness following the above investigation, we were informed that the dispute between the company and the miners at the Big Walnut mine regarding the shot firers was compromised by the miners agreeing to undercut half the coal, and the company to employ and pay two men to do the shot firing at night after the miners had prepared their blasts and left the mine, and the shot firers were not to fire any shot that was not properly prepared according to agreement.

The question of solid shooting is not only becoming a very serious one in many respects to both miners and operators, but one that greatly endangers both life and property. It is, however, a two-sided question, and the blame for all the ills resulting from it does not all lay at the door of the miners. Any miner of middle age can well remember the time when blasting coal off the solid was almost unknown, and even in some of the very hardest coal seams in the state miners took great pride in undercutting and side cutting their coal to the very best advantage, so as to use the least possible amount of blasting powder and secure the greatest percentage of lump coal, and any man who was careless about preparing the coal before blasting or shattering it to pieces with an overcharge of powder was characterized as a "Coal Butcher," or "Company Coal Digger," all the coal going through a screen one and one-quarter inch between the bars being called "company coal," the miners being paid on a lump coal basis, much of the fine coal at that time being hauled away from the mines and dumped in piles on the open ground, there being no market for it, and as such was a drag and dead expense to many operators, but during the eighties the finer grades of coal began to be more generally used for steam and other purposes and the demand for it at fair prices rapidly increased, thus stimulating a disposition on part of many mine operators to increase their percentage of fine coal. We can recall many instances where the most questionable methods were resorted to by some to increase their profits in that line, and preference was given to the unskilled and careless men who used the most blasting powder and produced the largest per cent of fine coal by giving them the best places in the mine and other important privileges, while the real practical miner was somewhat driven to the wall and had to take what was left, thus placing a premium on the non-practical man and the operator profiting in three ways, viz: First, by the profits on the increased sale of powder; second, by the extra margin of profit

on the fine coal; and third, where the coal was leased on a royalty basis of lump coal, by getting an extra proportion of fine coal without paying any royalty dues on it to the owner.

The introduction of lightning coal drilling machines and coal augers and the reckless use of blasting powder in mining, encouraged by the greed and shortsightedness of some coal companies in their desire to reap temporary gain by producing a large proportion of fine coal without realizing the ultimate outcome, has played such a part that practical skill in coal mining is becoming a lost art, and pride in method and workmanship is displaced by slothful indifference and disregard for law and order or safety of others.

By a reasonably close observation of things connected with mines and mining, there is no one thing that we believe has been more detrimental than solid shooting to the true and lasting interests of the real practical miners, and although it may have been a temporary gain in some instances to some operators, it is now and will be to their injury and to the injury of the coal trade of Ohio as long as it is permitted to be practiced. The system has done more to increase the number of native miners than any other thing by drawing from nearly every trade and calling men who realized that ability to bore a hole in the coal with a crank auger, put in a big charge of powder, pay an initiation fee to the United Mine Workers' Union, constituted all the credentials and qualifications necessary to make a full-fledged miner, and indeed, very strange to say, we have too many instances where miners seek and use the force and influence of their union to sustain their assertion of right to shoot the coal as they think proper, regardless of the wishes of the parties who own and operate the mine, and where the officials of the Miners' Union, who realize fully all the evils and dangers resulting from such a practice, seem just a little timid about taking the firm stand they should on a question of such vital importance to the trade and the safety or otherwise to life and limb of their members.

The forced introduction and rapid increase of mining machines in the mines in this and other states even in many instances where natural disadvantages were against their installment, is doing much to eradicate the evil by the enhanced value of their product compared with that produced by the dangerous and unjustifiable methods of the so-called "Coal Butchers." As one of the most striking evidences of that fact, the year 1904 closed with quite a number of valuable mines where solid shooting was in full force, absolutely and indefinitely closed down, the sole reason assigned by the owners being their utter inability to compete in the market with the properly mined coal of other companies.

All indications point to the fact that this will be one of the most burning questions of difference between the Ohio miners and mine operators at the expiration of the Inter-State Agreement, April 1, 1906, and any effort by both parties between now and then to harmonize matters will be well spent. There is no question but that the coal in a great many mines where it is now blasted off the solid should be properly undercut, both because of its nature and because of the great liability of sacrifice of life and property from the present system, and if it can be shown by a real practical test that mine cannot earn the regular and fair wages at present prices and prepare to mine coal properly, he is surely entitled to a better price for his labor, and the enhanced value of the product from that cause should enable the operator to pay more if necessary.

GEO. HARRISON.

(The following report, made by Jas. P. Davis, District Mine Inspector, and myself, is self-explanatory.)

Columbus, Ohio, July 30, 1904.

To the Peerless Coal and Mining Co., and employees of the Big Walnut Mine, Salem, O.

Gentlemen:

After repeated requests made by Mr. J. A. Case, of the Peerless Coal & Mining Co., and Mr. Percy Tetlow, president of the Miners' Organization, in the Salem district, Mr. Jas. P. Davis, the District Mine Inspector, and myself have made a very complete examination of the Big Walnut mine, the Cherry Valley mine and the Leetonia mine, in Columbiana county, and the Fairview mine, in Mahoning county, with a view of ascertaining the relative conditions affecting the firing of shots and the necessity of shot firers, or otherwise. We had been led to believe that some of the mines in that locality were of a very dry and dusty nature, and that great danger of dust explosions existed, more especially so in the Big Walnut mine. In that mine we were especially careful in securing all the facts, and, with the secretary of the Local Mine Committee and Mine Superintendent, visited every place suggested by them, as well as making a very general examination and inspection of the whole mine. Instead of finding a dusty mine, as reported, we failed to find a particle of dust, except the dust from the drillings of the auger holes in the coal. In fact, every working place was more or less damp, and in many of them we found small quantities of water standing. We also found that the Big Walnut mine was the only mine in the locality where special shot firers were employed, and understand that it is a matter of controversy between the company and their miners whether those special shot firers shall be retained or dispensed with, and whether the conditions are such as to make shot firers necessary.

"Fast shooting," or blasting off the solid, requires the use of much greater quantities of powder, and is always accompanied with greater danger than ordinary shooting, where coal is first undercut, yet there are a number of districts in the State, notably the Jackson county and Massillon districts, where the practice is pretty general, and there is an increased disposition on the part of miners everywhere to dispense with mining, or undercutting, where it is possible to blast off the solid. This disposition and practice prevails to such an extent as to have a great tendency to increase the number of miners by placing a premium on unskilled labor and also in order to get a more marketable product, prompting coal companies to introduce coal-cutting machines in thin coal seams and wherever the natural disadvantages do not absolutely exclude their installation, thus eventually militating against the best interests of the miners by increasing their numbers and reducing the amount of manual labor in the mines as displaced by machinery.

In an examination of the Leetonia mine, we found a drier mine, and in many instances the conditions more unfavorable for the miners firing their own shots than in the Big Walnut mine, yet the miners at the Leetonia mine fire their own shots, and we are very pleased to embrace this opportunity in complimenting the Leetonia miners in the very commendable system they have adopted and strictly enforced in their rule of shot firing. The man in the entry commences firing at the proper time, and as he ignites his fuse he calls to the men next to him in the rooms on each side of the entry; he then makes his way along the entry; the two men notified by him ignite their fuse and follow, giving warning to the two next in turn, and so on until all

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In the entry have ignited their fuse. Four feet six inches of fuse is used in each shot, and when the entry man is far enough to be out of danger he stops and stops every man in the entry at that point until all reach there; they then proceed out of the mine. Any man violating that rule is suspended from work for one week, and on a second offense is discharged.

We have no authority, neither do we take any part in deciding whether special shot firers shall be continued or dispensed with at the Big Walnut mine. We find, however, that there is no explosive gas to be discovered in that mine, no coal dust or any exceptional danger more than ordinarily encountered by miners in other parts of the State, where solid shooting is practiced, and in consequence, even if we had the power to order shot firers at the Big Walnut mine or in the Leetonia district, it would be equally fair to the miners in other districts to order them where fast shooting was in practice.

Very respectfully submitted.

GEO. HARRISON,

Chief Inspector of Mines.

JAS. P. DAVIS,

District Mine Inspector.

EVILS OF SOLID SHOOTING OR BLASTING COAL IN MINES BEFORE IT IS PROPERLY UNDERCUT OR PREPARED.

(Taken from Chief Mine Inspector's report for year 1906.)

While philosophizers and geologists are pondering over the dire results and warning the people of all nations of the rapid approach of the final exhaustion of the coal measures; and scientists and inventors are racking their brains devising plans and methods to collect and utilize the clouds of smoke and gases rushing into the elements from the towering tops of the smoke stacks of the manufactories and industries of the world, it may be well to take into consideration the unwarranted, wasteful methods of producing the precious black diamonds, which are yearly becoming scarcer and increasing in value.

It is not necessary to refer to the methods in other countries, or even in other States; the people of Ohio have sufficient food for a complete study of this question in the destructive and dangerous methods within the confines of their own state. Coal, though supposed to be owned by individuals and corporations, is, to some extent, the treasure of the people, stored in the interior of the earth, a legacy bequeathed by nature for the use and comfort of the people, and the Commonwealth of Ohio surely has a right to see that future generations are not deprived of the advantages and comforts derived from the use of the coal on account of the present unjustifiable, unnecessary, wasteful and dangerous methods of producing it.

Following the death of three miners who had returned too quickly to a room in the Egypt No. 1 mine, in Tuscarawas county, after firing a large amount of powder in one blast, and being overcome and suffocated with the carbonic oxide, the writer, in company with Mr. W. H. Turner, inspector for that district, held a conference in New Philadelphia, with representatives of operators and miners, and gained considerable information as to the reckless

use of blasting powder and the dire destruction of property and danger to life and limb resulting from this most baneful of all known systems of producing coal.

It is common knowledge that in mines in Tuscarawas county, and in other solid shooting districts in the state, holes are bored in the solid coal from six to sixteen or eighteen feet deep, and from six to eighteen pounds of blasting powder used in one charge. The general results of such a procedure are that miners are frequently knocked down with the concussion of a single blast; trap doors are wrenched off their hinges, stoppings and brattices blown out; props that have been placed to support the roof are swept out of place; loaded and empty cars are often turned over; iron and wooden track rails are twisted and broken to pieces; the coal is shattered to slack, and a large portion of it blown back along the room or entry where the blast takes place, and is forever irrecoverable.

There are some kinds of coal that are not seriously affected by the use of a large quantity of powder in producing it, but the most of bituminous coal, where blasted before being undercut, is so jarred and the effects of the powder so disseminated through the seams and facings of the vein that when the product is exposed to the atmosphere—the rain and sunshine—it falls to pieces like quick lime, and before it is handled two or three times it reaches its destination greatly depreciated in value, disappointing to the consumer and a source of annoyance to the shipper. The roof in the mines is so jarred and shaken by continual earthquake-like concussions from ridiculously large charges of powder used by unskilled miners, until the inevitable result is a grinding creep or squeeze gradually crawling over the mine, destroying airways and haulways, entailing unnecessary and endless expense, and burying in the earth hundreds of thousands of tons of pillar coal which could be mined cheaply, brought to the surface, and added to the commercial wealth and prosperity of the State.

There are many more reasons which could be advanced against this perilous system of mining. It has done more to make the calling of the miner a perilous one than any other cause; placing in the hands of an influx of unskilled laborers the life of every man who enters such mines.

The great amount of fine coal and dust gathered along the sides and roof, and scattered through every chamber of the mine, is a continual source of danger, combustible in its nature and always liable to cause destructive mine fires, and at any moment a "blown-out" or "windy" shot may take place, igniting a quantity of smoke or gas, raising and igniting the dust and carrying destruction and death through every part of the mine, such as has frequently occurred in adjoining States. There may be seams of coal that cannot be profitably mined at this day to compete with other productions unless this method of mining is resorted to, but it is very questionable if there is any justification for developing a mine in a vein or territory of coal surrounded by natural disadvantages to an extent of inability to meet fair competition, and making calculation on overcoming that inability by the sacrifice of human life and limb. Aside from this, it is safe to say that 90 per cent. of all the coal blasted off the solid in Ohio, can be successfully and profitably undercut either with hand or by mining machines. The argument is usually advanced that it would cost more to produce the coal—which in some instances is probably true—but the enhanced value of the product would far more than offset the extra cost, independent of all the destruction to property, waste of coal, and sacrifice of life and limb, besides preference would be given to skilled miners.

"SHOT FIRERS."

A great many labor leaders and others advocate shot firers as the acme of relief for all the dangers connected with solid shooting and where large quantities of powder are used in one blast in coal mines, and legislative bodies in several mining states have enacted laws providing for shot firers in mines under such circumstances, the blasting to be done at night after the miners have left the mine.

With all due respect to the opinions and honesty of purpose of the advocates of shot firers, it is evident that a great many of them are not considering this important question in the broad sense it deserves and should be considered. They are only dealing with the danger part of it by providing a means by which the liability to danger is reduced to the lowest possible number; or, in other words, they are not seeking to remove the danger, but simply transferring it from the men who are responsible for it to the innocent shot firer who is induced to accept that position because of the few extra paltry cents a day in wages. The best and most business and statesmanlike manner of dealing with the question is to remove the cause of danger as far as practical and to that extent the effect will disappear.

Let arrangements be made to undercut all coal that can be profitably undercut by hand or machinery. If there is any that cannot be successfully mined in that way, it may then be necessary to consider the wisdom of shot firers. In any mine where from the presence of fire damp, or any other cause, shot firers would be necessary, we believe the mine should be provided with a sufficient volume of air—as all mines ought to be—to allow shots being fired any time during the day, so as to dilute promptly and carry away the powder smoke. Shot firers should be men of wide practical experience, good judgment, and clothed with a great deal of discretionary power in the firing of shots. They should examine the manner in which the hole is drilled, the amount of powder used in it, see that the place is properly posted, and that no danger from falling roof or standing gas exists. If not satisfied on all these points, he should have the power to refuse to fire any shot, and prohibit its being fired. There is no end of reasons which are well known to any good, practical miner, that shot firing at night has many disadvantages and entails considerable loss and annoyance to the best class of miners; besides, the fatalities to shot firers in the last year bespeak the dangers they assume.

We frankly admit that there are a great many men employed in the mines whose manner of carrying their mine lamp sufficiently exposes the fact that they are not capable of being trusted to drill holes, charge and fire them with safety to themselves and others, and we believe provision ought to be made that such work ought to be done by experienced men, but we admire the wisdom and foresight of any man who shuns the position of shot firer, placing himself before the cannon's mouth, a target for the impractical man, the unskilled driller of holes, and, worse still, the unscrupulous powder fiend, who is afraid to fire his own shots.

GEO. HARRISON.

(NOTE—These reports are republished so that there may be no misunderstanding as to the attitude of the Department in regard to this all important matter from the first time attention was called to it up until the present time.)

NOTE.

On account of a second explosion, which occurred at the Delmore mine, in which another shot frer lost his life on January 24, 1910, following in such close succession to the one which took place in the same mine on December 16th, 1909, in which two shot frers were killed, it has been deemed proper and fitting to include the report of the District Mine Inspectors making the investigation in the 1909 report, so that there may be a full and complete understanding of the entire situation and recommendations suggested by the Inspectors at that time.

The following is a report of the investigation of the second explosion, which occurred in the Delmore mine January 24th, 1910, published in the "Salem News":

"APPALLING CARELESSNESS IN MINING."

District Mine Inspectors' Report to Chief Inspector Harrison Regarding Delmore Explosion a Startling Disclosure of Disregarded Instructions—Bad Mining Prevalent in This County 'Tis Said.

Salem and Columbiana county people, who have been anxiously awaiting a report of the findings of the mine inspectors who investigated the cause of the explosion at the Delmore mine, in which James Blaemire, of this city, lost his life, will find interesting reading in Chief Mine Inspector Geo. Harrison's letter and the report of the district inspectors that follow.

The report should certainly cause an awakening among miners of the county, as it shows that the same cause, that of drilling too deep, is affixed to the explosion in January as to the former one. The use of black powder is forbidden and the chief inspector states that if mining is not done according to mining laws and instructions from the State Department, injunction proceedings will be instituted to stop mining in this county until a better system can be followed. The letter and report, following, explain the situation fully:

COLUMBUS, O., Feb. 21, 1910.

Editor the Salem News.

Dear Sir—Contrary to our general custom we have sent you for publication a copy of the report of our district mine inspectors covering their investigation into the cause of the explosion at Delmore mine on January 24, last, in which Mr. James Blaemire, a shot frer, unfortunately lost his life. We do this believing that the miners and general community in your locality are vitally interested in knowing the dangers resulting from the method of producing coal at Delmore and other mines in the vicinity and should be possessed of all the facts in that connection.

It will be seen by this report that, notwithstanding little more than a month previous to this explosion two other shot frers lost their lives in a very similar manner, the positive instructions given by our inspectors at that time and approved by the Department to avoid a recurrence of such a calamity has been totally ignored both by many of the miners and by the shot frer, the former by failing to cut the coal as required and by extending their drill

holes far beyond the mining, and the latter (the shot firer) because of his firing shots where no mining was done and where the holes were improperly drilled.

It seems strange that a man with the practical knowledge and experience the deceased was said to have had, and with full instructions and authority to refuse to fire any shot prepared contrary to order, would run the risk of firing many shots the investigation has shown that he did fire. The most reasonable and charitable explanation that can be made, however, is that Mr. Blaemire's desire to refrain from leaving any of the miners without coal for the following morning overbalanced his better judgment and induced him to fire shots that he must have known were liable to result in his own death and destruction to the mine and which has added one more martyr to the most destructive and suicidal system of producing coal that was ever practiced in any country.

It is indeed a peculiar incident and somewhat regrettable circumstance that both the recent explosions at this mine should have taken place at the same point, although the report shows that it could have taken place from a similar cause at a number of other points where shots have been fired.

Following the first explosion we denounced in rather strong language the unskillful manner in which holes were drilled and excessive charges of powder were used, and were very much criticised for our pains, but we feel that we are more justified than ever in doing so, yet we are in sincere sympathy with the person whom fate has doomed as the man to prepare the blasts that started both explosions, and desire to forcibly remind others that the concussion from their methods of preparing their blasts and unreasonably heavy charges of powder used were responsible for raising and filling the air with inflammable dust and preparing the elements of danger ready to be set in motion by the firing of the two shots in No. 5 room on No. 3 right entry. These shots were no more dangerous or no more unskillfully prepared than many others that had been fired by the shot firer the same evening, but the mixture of fine coal dust with the proper proportion of oxygen and a favorable temperature for an explosion of dust had evidently been reached when the shot firer ignited the two shots in No. 5 room, and the expansion of flame from the heavy charges of black powder from the two holes drilled into the solid coal did the balance.

The inspectors in their report following the first explosion recommended the use of permissible explosives instead of common black powder; in the present report they forbid the use of black powder. The reason for this is that the flame from permissible explosives is so limited and of such short duration compared with common blasting powder that the danger of coal dust being ignited by the use of permissible explosives is very remote. Miners object to the use of permissible explosives, claiming that by their use the coal is broken to a greater extent than by using black powder and in consequence reduce their earnings. Any practical man traveling through the Delmore mine needs no other information than to see the great amount of coal blown back in the gob where it cannot be recovered and see the pulverized condition of the coal which comes out of the mine, much of which must be run through the screen, to convince him that the miners do not receive pay for more than 45 or 50 per cent of the coal they mine, or rather, of the coal they do not mine, but which they burn out of the solid coal with powder. There is no doubt a great many good practical miners in Columbiana county and some honorable exceptions at Delmore mine who do prepare their coal properly, but it would be an outrageous travesty on the practical miner and on the word mining to designate such a system of producing coal by that name.

We have the returns for last year showing the production of coal and amount of powder used in every mine in the State and the number of tons produced at Delmore is far less to the keg of powder than any mine in the State, and we presume we would be justified in saying any mine in the United States. Nine and three-fourths tons of mine run coal to 25 pounds of powder at Delmore, 15¼ tons mine run to 25 pounds of powder at Fairview mine, which is the same vein of coal as Delmore. After you figure the amount of coal that goes through the screen it must be costing the miner on an average the price of between four and five pounds of powder on every ton of lump coal produced at the Delmore mine. Why is it that at Fairview mine nearly double the amount of screened lump coal is produced with the same quantity of blasting powder as at Delmore?

We have never seen any special danger from the use of black powder, especially in non-gaseous mines, if the coal is fully and properly mined, but where the coal is not mined and so many heavy shots with so much dust flying in the air there is great danger of dust explosions, neither can any person guarantee that there is no danger even with the use of permissible explosives. The time has come, however, when it is not any longer a question of sentiment, it is not a question of the price of powder or explosives or a question of greater cost of producing the coal, but a question of the unnecessary sacrifice of human life and the protection of those men against their own suicidal acts and against the overt and deliberately dangerous acts of each other.

If arrangements are not made to fully mine the coal at the Delmore and other mines in Columbiana county and the orders of the inspectors are not fully complied with the Department will at once seek the aid of the courts in enjoining such mines against operations under such a dangerous system.

GEO. HARRISON,

Chief Inspector of Mines.

REPORT OF THE DELMORE MINE EXPLOSION MADE BY INSPECTORS SMITH, MORRISON AND MILLER.

New Philadelphia, O., Feb. 18.

Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, O.

Dear Sir—We herewith submit to you the facts in connection with the explosion which took place on January 24, at the Delmore mine, Leetonia, Columbiana county, O., and which resulted in the death of Mr. Jas. Blaemire, who was employed as shot firer to fire the shots in the mine after the miners had left the mine.

District Inspector W. H. Miller being in the neighborhood, and learning of the explosion, immediately went to the mine, at the same time notifying District Inspector Alex Smith, in whose district the mine is located, and who arrived on the scene the following day. With the assistance of mine foreman and miners, Mr. Miller and Mr. Smith succeeded in recovering the body of the victim about 2 p. m., the day following the explosion. This body was found on the right entry, just beyond the No. 9 room.

On the 26th ult., in company with yourself, we again visited the mine, but as the ventilating system was entirely disarranged, were unable to enter the mine. Instructions were given to the company to reconstruct the stoppings and build the fan house reversible; then notify the Department when they were ready for inspection.

On being notified that the mine was ready for inspection, we again returned, and in company with yourself, Mr. Percy Tetlow, president of the United Mine Workers in that district, and Mr. Daniel McGrath, the mine foreman, made a thorough inspection of the mine on the 17th inst., the result being our firm conviction that the explosion which resulted in the death of Mr. Blaemire occurred from shots fired in the No. 5 room on the third right entry, being the same place where the blown-out shots caused the explosion on December 16. In this room, two shots had been fired; one on the right hand rib, and another near the center of the room. Both of these were drilled and fired in violation of the orders given by the Mining Department, which specified that no hole should be drilled beyond the depth of the mining or cutting, and that if shot firers were employed they should not fire any shot drilled contrary to that order.

The hole next to the rib was drilled 18 inches, and the center hole 23 inches deeper than the cutting, and in consequence could not possibly do the work intended to be done, the result being a portion of the hole only being blown out.

In the No. 2 entry, all the shots were fired, with no evidence that the explosion had exerted any force in this part of the mine, but two shots were fired without any mining being done.

In the fourth right entry, some of the shots were fired and the coal blown out so that we were unable to tell whether any mining had been done or not.

In the No. 4 room of No. 4 entry, two shots were tamped. There was some mining done on one of these shots, but the other was not mined in any part, and was a very heavy shot.

At the head of the entry, a place turning off to the left, another hole was tamped, but not fired. We do not know how deep this hole was, but the shearing was not over 18 inches deep, with no mining whatever. On this entry, there had been considerable force. The track was torn up for some distance on the outer end of the entry, and there had been some fire, as we found some burned paper and dust burned on the posts. The shots had also been fired in the main entry, but no damage done. In the fourth left entry, the shots were fired. In these the coal was blown out. We could not tell much about whether they had been mined or not, but some were found standing; no mining had been done on these.

It is a conclusive fact that the order of this Department in regard to firing shots was violated, as well as the law in regard to the kind of tamping to be used, as we found holes tamped with dummy cartridges, filled with drill dust, and shots fired without any mining being done whatever.

The shot firers and the miners were aware of the fact that orders had been given that no shots were to be fired unless at least one-half of the coal was undercut, and no person to fire any shot unless he tamped it himself, or had seen the charge tamped. As these orders have been violated, we consider that those who have violated them are the parties responsible for these accidents.

By careful examination of all the places in advance of the air, and in abandoned places where fire-damp would be most likely to be found, we were unable to find a single trace of explosive gas, and we are thoroughly convinced that gas played no part in this explosion.

After our investigation of this mine, we are more than satisfied that the reckless system of mining practiced in this and other mines in the same district, and previously condemned by the Mining Department, is not only a continual menace to life, but is also an unwarrantable waste of coal, as great

quantities are pulverized and blown back in the rooms and working places, where it remains; in fact, it is almost impossible to load it out.

The Department has time and again advised both miners and operators to stop this dangerous and destructive method of producing coal, and advised them to adopt a safer method; and not wishing to impose any unreasonable burden on any one, we recommend that "permissible explosives" be used, and gave orders that at least one-half of the coal be undercut before being blasted.

The Department is loath to give arbitrary or stringent orders when it can be avoided, but as its duty is to protect life, limb and property, and we find that those who need and should try to protect themselves ignore orders given solely for their protection, we feel that it is time to give such orders that will not only protect them while at work, but will protect them from endangering lives of their fellow workmen unnecessarily.

We again recommend that all coal be undercut before being blasted. If this mine resumes operation, the orders previously given must be thoroughly complied with; that is, that at least one-half of the coal be undercut, and no hole drilled beyond the mining, and if the coal must be mined in this manner, the use of black powder must be prohibited, and nothing but "permissible explosives" used. The necessary precautions must be exercised in keeping the mine free from dust and it must be clearly understood that if those orders are again violated, steps will immediately be taken to enjoin the company from operating under the present system of mining.

Respectfully submitted,

ALEX SMITH,

Inspector Sixth District.

THOS. MORRISON,

Inspector Ninth District.

W. H. MILLER,

Inspector Seventh District.

Approved:

GEO. HARRISON,

Chief Inspector of Mines.

Editorial appearing in the columns of the "Salem News" commenting on the explosions which occurred at the Delmore mine, and causes leading up to the same, ending with an appeal for saner methods of mining, in order that a repetition of the Cherry mine disaster may not be recorded in the annals of coal mining in the State.

"THE DELMORE REPORT."

"By special effort, the News is today presenting for the benefit of its readers, and especially for the perusal of those interested in the mining industry in this vicinity, the report of the district mine inspectors on the cause of the last explosion in the Delmore mine, near Lectonia.

This report and the communication from the chief State Inspector, Mr. Harrison, are startling in their revelation of the carelessness which exists in Columbiana county mines. The recent deaths of the three shot firers in the Delmore mine seem to have been altogether unnecessary and would never have occurred had the miners prepared for the blasts in the safe manner advised by the State Department. The finding of shots that had been improv-

erly drilled and tamped and where there was insufficient shearing and little or no undercutting at all can indicate but one thing—bad workmanship and an indifference to human safety that is appalling.

We do not desire to excuse the operators of this or any other mine if they are careless regarding their own responsibilities. Indeed, we believe that if they knew, as it certainly was their duty to know, that such careless methods of mining were in vogue in their mine they should have refused to permit such careless miners to enter the shaft.

But miners who take such chances with fate as were taken in the Delmont mine, according to the inspectors' report, are only entitled to the sternest condemnation that an aroused public opinion can administer, and we fail to understand how, knowing the effect of their carelessness, they can ever have the temerity to face the bereaved wives and children of the unfortunate victims. It is possible to understand why the shot firers took chances, for they doubtless did not want to incur the enmity of the miners, and recognized that the carelessness was very general. Inspector Harrison seems to have struck the right note when he declares that "it is not a question of the price of powder, or explosives or a question of greater cost of producing the coal, but a question of the unnecessary sacrifice of human life and the protection of the men against their own suicidal acts and against the overt and deliberate dangerous acts of each other." And it is noticeable also that he in no wise excuses the operators, for they are distinctly given to understand that safe methods must be enforced or the courts will be called upon to close the mines.

It is to be hoped that the lesson of these recent disasters and this vigorous official disclosure of the causes will make a deep impression on those engaged in the mining industry in this county, to the end that this public will not be called upon to witness such heartrending scenes as occurred in the vicinity of the Cherry mine disaster in Illinois."

MINERS' LAMP. OIL.

During the first part of the year more or less complaints were received by the department in regard to the quality of oil used in the mines, but until there is some legislation enacted by which the agents of oil companies, as well as those engaged in selling, and the users of these inferior oils can be held responsible under the law, their detection and prosecution is attended with more or less of a degree of uncertainty, and it is to be hoped that the present law may be so amended and strengthened so that the real guilty parties may be brought to justice, as well as provisions made for imprisonment in case of a second offense.

The following circular was issued January 27th. A letter addressed to the Chas. H. Moore Oil Co., is also published in answer to their correspondence, which are self-explanatory.

STATE MINING DEPARTMENT, COLUMBUS, OHIO.

January 27, 1909.

To the Manufacturers of Miners' Oil to be Used for Illuminating Purposes in the Mines of Ohio:

Gentlemen:—After the meeting in this office about four years ago with the representatives of the manufacturers of miners' oil, and the many promises that everybody would "comply with the law," we rather flattered ourselves that we would have no further trouble about inferior miners' oil. To break faith at any time, and under any circumstances, is always calculated to shake confidence in the sincerity of our best friends, but to do so by flagrant violation of law and at the expense of the health of the miners, seems to be the "last straw." We trust that this has no reference to you, or your company, and we are not making any charge of that kind, but without going into details as to how we know it, we know it, and we know it without any fear of contradiction that the mining localities are again being flooded with a very inferior quality of miners' oil.

The law specifies that "only a pure animal or vegetable oil, or other oil as free from *smoke* as a pure animal or vegetable oil, and not the product or by-product of rosin shall be used for illuminating purposes in the mines in this state. The specific gravity of the oil shall not exceed 24 degrees Tagliabue."

It is not even necessary for us to suggest to oil manufacturers that Ohio legal test miners' oil cannot be compounded with a mixture of less than 84% of pure animal or vegetable oil, and not more than 16% mineral or miners' neutral oil. True, a Texas dope or some other heavy mineral oil may be used that will retain the low gravity required by law, but the excessive *smoke* given off from a miners' lamp tells the tale and exposes the dishonest manufacturer or dealer.

This department has relinquished all hope of securing Ohio legal test miners' oil without resorting to the courts, and will immediately take samples from every package the district mine inspectors can find on the market. The samples will be submitted to an analysis, and prosecution follow in every case where the sample does not contain 84% of pure animal or vegetable oil. Somebody has forfeited all claim to any further leniency, and none will be extended. Everything on the market and in transit will be sampled if put on sale. Those that have kept faith and complied with the law have nothing to fear, and they have our full appreciation of their efforts in this direction.

Very truly yours,

GEO. HARRISON,
Chief Inspector of Mines.

STATE MINING DEPARTMENT, COLUMBUS, OHIO.

September 27, 1909.

To the Manufacturers of Miners' Oil:

Dear Sirs:—The following is copy of letter just received by this department, also copy of our reply:

"THE CHAS. H. MOORE OIL CO.

"Cincinnati, Ohio, September 24, 1909.

"Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio.

"Dear Sir:—Will you kindly inform us if your recent ruling in regard to miners' oil is still in force; that is, do you still require that miners' oil for use in the state of Ohio shall not contain more than 16 per cent. mineral oil?

"The reason we ask is that the state seems to be full of oil sold at 37 to 38 cents a gallon in barrels delivered. Summer white cottonseed oil in tank cars is now worth 42 cents a gallon, and a strictly legal test miners' oil cannot possibly be made and delivered to points of consumption in this state at a cost to the manufacturer of less than 42½ cents per gallon.

"We know that you are not interested in the price proposition except to the extent that it may indicate that the law is being evaded. We know of a number of instances in which oil has been sold within the last week at 37 to 38 cents per gallon delivered, and we therefore are quite sure that the oil named does not conform to your specifications of several months ago.

"We are trying conscientiously to live up to your requirements, and therefore take the liberty of asking if these requirements are still in force and if your department is still watching to prevent the sale of oil which does not come up to your specifications.

"Thanking you in advance for a reply at your earliest convenience, we are,

"Very truly yours,

"THE CHAS. H. MOORE OIL CO.,

"H. C. Mather, Vice-President."

(Copy of Reply:)

"STATE MINING DEPARTMENT, COLUMBUS, OHIO.

"September 27, 1909.

"Chas H. Moore Oil Co., Cincinnati, Ohio.

"Dear Sirs:—Yours of 24th duly received, and we note what you say in regard to the question of cheap miners' oil being sold in the state; the price indicating its inferior quality.

"It is surprising to us that oil manufacturers seem to be unable to realize that just as much miners' oil would be sold if the quality was maintained as if the oil was adulterated to the extent that would enable those adulterating it to sell at a little lower price. I regret very much that the law is not such that we would send any manufacturer to the penitentiary, where he ought to be, for bartering on the health and lives of the miners by seeking to secure the trade from fair dealers through unfair competition by the adulteration and sale of unfair commodities.

"We hope the time is not far distant when the law will be more complete, and it will be much easier to detect fraud in the compounding of miners' oil. We have repeatedly stated that the only compound we believe in keeping with

the spirit of the law is 84% and 16%. Manufacturers know that much better even than we do.

"If you will advise where we can procure samples of the oil that you refer to, we will instruct our inspector to take the matter up.

"Very truly yours,

"GEO. HARRISON,
"Chief Inspector of Mines."

MINE FIRE IN JOBS NO. 2 MINE, HOCKING COUNTY, OHIO.

On April 6th a fire broke out in Jobs No. 2 Mine, operated by the Sunday Creek Co., with indications of being one of the most extensive and dangerous in recent years in the mines of the state, but it was handled with exceptionally good judgment and dispatch, for which the management and those assisting, together with District Mine Inspectors Kennedy and McDonald, deserve the highest commendation and praise.

A full and complete account of this fire, and the manner in which it was managed and controlled, will be found in the detailed report of mines in the report of District Mine Inspector Edw. Kennedy, in whose district the mine was located.

STATE MINING DEPARTMENT.

Columbus, Ohio, May 26, 1909.

Sunday Creek Co., Columbus, Ohio.

Dear Sirs:—In accordance with the request made in a telegram dated "Nelsonville, May 14th," from your Mr. R. S. Weitzell, to your Mr. N. D. Monsarrat, in this city, a copy of which was sent to this office, we yesterday made a very thorough inspection of the conditions surrounding the territory where the fire has been in your Jobs No. 2 mine. We were accompanied by the superintendent, Mr. C. W. Ferrell, and Mr. Jas. Pritchard, your representatives, and by Mr. Jno. Shore and Mr. Geo. Garner, a committee representing the miners employed at that mine.

We are indeed pleased to compliment the management on the work done to seal up the territory affected by the fire. It is questionable if any fire in any mine in the state has been so thoroughly and effectively sealed up by brick and cement stoppings. About 90 acres of territory are enclosed by those stoppings, with about four stoppings yet to be built, requiring in all about forty large brick and cement stoppings to completely seal up that part of the mine. While it is not yet closed up, there are no signs of fire; yet we believe it is well to have it closed up and to remain so until such time as there is positively no doubt that combustion has ceased.

We desire to advise that from our judgment in the matter, there is no fear of any unusual danger resulting from a starting-up and operation of other parts of this mine, and in consequence have no objections to the mine being started at any time that your company desires to do so, with the following proviso, however, that, in addition to the two gas pipes already inserted in the brick stopping on the main north entry on south side of fire, that two pipes also be inserted in the brick stopping now erected across the main north entry on the north side of the fire, and that two pipes also be inserted in the last brick stopping yet to be built in the main west entry. All these pipes to be equipped

with valves, so that they can be opened and closed when necessary, by some one directed to keep watch over these stoppings, and that the pipes in all these three stoppings shall be housed in a locked enclosure, to prevent any one tampering with them; also that until such time as it is deemed necessary to reopen that territory, the company shall designate some man, or men, to examine with a safety lamp, previous to men entering the mine, all stoppings enclosing fire territory every morning, and to open valves in pipes in order to ascertain condition of sealed portion of the territory; the inserting of the pipes and locked enclosures to be as directed by district mine inspector, Edward Kennedy. The sealed territory not to be opened until the sanction of this department is obtained.

Very truly yours,

GEO. HARRISON,

Chief Inspector of Mines.

EDW. KENNEDY,

Inspector Second District.

JOHN L. McDONALD,

Inspector Third District.

COAL PRODUCTION

COAL TRADE IN THE STATE OF OHIO FOR THE YEAR 1909.

A compilation of the statistical reports received from all the coal producing counties of the state for the year shows an increase in the coal production of almost one and a half million tons. While this is a large increase when compared with that of the preceding year, yet the results show that the country has not yet fully recovered from the industrial and financial condition which affected the coal industry during the latter part of the year 1907, and extended throughout the year 1908. The prospects, however, are such as to give encouragement to those engaged in the industry that the year 1910 will show a decided revival and that the tonnage may again assume the high proportions reached during the wave of prosperity which the country enjoyed previous to the recent depression.

Districts.

The Hocking Valley District, which for years was the leading coal producing district of the state, reported a loss as compared with the preceding year; the Eastern Ohio District, or the Number Eight Vein, reported an increase of over a million tons, while the Cambridge District also showed an increase.

Labor.

There was no shortage of labor in evidence and no strikes of any importance occurred causing a cessation of work, as the interstate wage agreement was still in force during the year, and only minor troubles of local importance disturbed the status of the coal trade, and were quickly disposed of.

Condition of the Trade.

General activity in the coal trade did not manifest itself until about six months after the opening of the year, as mills and other industries were not yet operating to their full capacity, there not being as great a consumption of their products, due to the industrial depression, all of which reacted on the coal industry, resulting in a decreased demand for coal products.

Prices.

Prices were very much demoralized during the year on account of rivalry between large coal companies and the independent ones, as well as keen competition which was encountered from other coal producing states.

Car Supply.

A shortage of cars was noticeable during the latter part of October and through November. No floods or other calamities marred the year in the coal industry. Climatic conditions had a telling effect on the coal trade as they were not at all conducive to a large disposal of the output.

The prospect for a year full of activity from every standpoint is now in evidence, and it is predicted that with anything like normal conditions, the coal tonnage will once again approximately reach the large production reported for the years 1906 and 1907, when unprecedented prosperity was experienced all over the country.

COAL TONNAGE IN THE STATE OF OHIO FOR THE YEAR 1909.

In comparing the statistics bearing on the coal production in the state for the year 1909, with that of the preceding year, a gain of 1,467,232 tons is shown, the total tonnage amounting to 27,755,032 tons, whereas in 1908, the output was 26,287,800 tons. With the exception of the year 1907, when the coal production increased five millions, the year 1909 shows the greatest gain since the year 1902, when the tonnage increased three millions.

The output, while not showing the decided gains of 1907, was on the whole encouraging, as it demonstrated that the country was gradually, if slowly, recovering from the industrial depression which followed the unprecedented prosperity of that year, and taking into consideration the time, the number engaged in the industry, climatic conditions, and brisk competition, the year was altogether a very satisfactory one.

Districts.

The Hocking Valley District (Athens, Hocking and Perry counties), which was for years the leading producing district in the state, and the basis for all the wage-scale agreements entered into between miners and operators, reported a loss of 94,468 tons out of a total tonnage of 7,467,224 tons. The No. 3 Vein (Belmont, Harrison and Jefferson counties) reported an output of 10,625,728 tons, a gain of 1,021,196 tons.

Increases.

All the large coal producing counties, with the possible exception of Hocking, Stark and Perry, reported large gains: Jefferson showing a gain of 491,140 tons; Belmont, 401,699 tons; Columbiana, 197,545 tons; Athens, 183,079 tons; Guernsey, 182,238 tons; Tuscarawas, 182,652 tons; Noble, 170,863 tons and Harrison 128,357 tons.

Losses.

Hocking county leads in the loss of tonnage reported, amounting to 245,904 tons; Stark, 65,660 tons; Vinton, 54,614 tons; Carroll, 40,995 tons; Wayne, 38,538 tons, and Perry, 31,643 tons.

Production.

Belmont county ranks first in point of production, producing 5,993,413 tons; Athens second, with 4,354,074 tons; Jefferson third, 4,056,148 tons; Guernsey fourth, 3,108,686 tons; Perry fifth, 2,076,407 tons and Tuscarawas county, 1,513,900 tons.

Pick and Machine Tonnage.

The pick tonnage amounted to 4,608,402 tons, a loss of 68,467 tons; the pick tonnage represented 16.6% of the total tonnage of the state. The machine-mined coal amounted to 23,146,630 tons, a gain of 1,535,699 tons, the percentage being 83.4% of the entire production of the state.

Employees.

The total number of men employed as reported from the various coal operators in the state was 47,019, a loss of 3,248.

COAL TRADE IN

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ANNUAL REPORT
The average time worked by pick mine employees was 182 days; machine run-
ners, 171, and drillers, loaders and shooters, 172 days.

TABLE SHOWING THE COAL PRODUCTION BY COUNTIES DURING THE
YEAR 1909.

| Counties. | Tonnage for 1909. | | | | Rank in Production. |
|------------------|-------------------|-----------|-------------------|------------|------------------------|
| | Lump. | Nut. | Pea and Slack. | Total. | |
| Athens | 3,060,290 | 566,942 | 726,842 | 4,354,074 | 2 |
| Belmont | 3,948,991 | 823,044 | 1,221,383 | 5,993,418 | 1 |
| Carroll | 270,064 | 47,690 | 80,331 | 398,085 | 14 |
| Columbiana | 469,465 | 116,682 | 128,178 | 714,325 | 9 |
| Coshocton | 237,414 | 61,558 | 91,330 | 390,302 | 15 |
| Gallia | 8,201 | 551 | 1,168 | 9,920 | 26 |
| Guernsey | 2,123,190 | 334,737 | 650,759 | 3,108,686 | 4 |
| Harrison | 344,971 | 89,828 | 141,363 | 576,162 | 10 |
| Hocking | 714,311 | 148,376 | 174,056 | 1,036,743 | 7 |
| Holmes | 9,402 | 3,328 | 3,114 | 15,844 | 24 |
| Jackson | 574,883 | 88,501 | 159,650 | 823,034 | 8 |
| Jefferson | 2,674,564 | 477,616 | 903,968 | 4,056,148 | 3 |
| Lawrence | 151,727 | 24,955 | 38,003 | 214,685 | 17 |
| Mahoning | 39,290 | 9,568 | 15,116 | 63,974 | 23 |
| Medina | 8,994 | 893 | 2,578 | 12,465 | 25 |
| Melgs | 366,431 | 48,176 | 128,988 | 543,595 | 11 |
| Morgan | 146,101 | 15,842 | 25,298 | 187,241 | 18 |
| Muskingum | 299,260 | 46,516 | 70,441 | 416,217 | 13 |
| Noble | 239,569 | 52,788 | 86,698 | 379,055 | 16 |
| Perry | 1,448,950 | 249,902 | 377,555 | 2,076,407 | 5 |
| Portage | 71,757 | 12,605 | 18,262 | 102,624 | 20 |
| Scioto | 6,747 | 1,035 | 1,134 | 8,916 | 27 |
| Stark | 323,278 | 44,153 | 90,961 | 458,392 | 12 |
| Summit | 46,976 | 13,280 | 18,012 | 78,268 | 22 |
| Trumbull | 4,072 | 525 | 808 | 5,405 | 28 |
| Tuscarawas | 963,144 | 191,520 | 359,236 | 1,513,900 | 6 |
| Vinton | 92,703 | 10,828 | 25,397 | 128,928 | 19 |
| Washington | 838 | 148 | 246 | 1,232 | 29 |
| Wayne | 67,489 | 6,058 | 13,440 | 86,987 | 21 |
| Total | 18,713,072 | 3,467,645 | 5,554,315 | 27,755,032 | |

TABLE SHOWING TOTAL PRODUCTION OF PICK AND MACHINE-MINED COAL BY COUNTIES DURING THE YEAR 1909.

| Counties. | Pick Coal. | Machine Coal. | Total. |
|------------------|------------|---------------|------------|
| Athens | 155,931 | 4,198,143 | 4,354,074 |
| Belmont | 225,665 | 5,767,753 | 5,993,418 |
| Carroll | 64,858 | 333,227 | 398,085 |
| Columblana | 288,948 | 425,377 | 714,325 |
| Coshocton | 227,900 | 162,402 | 390,302 |
| Gallia | 9,920 | ..... | 9,920 |
| Guernsey | 27,150 | 3,081,536 | 3,108,686 |
| Harrison | 39,734 | 536,428 | 576,162 |
| Hocking | 209,537 | 827,206 | 1,036,743 |
| Holmes | 15,844 | ..... | 15,844 |
| Jackson | 588,764 | 234,270 | 823,034 |
| Jefferson | 355,096 | 3,701,052 | 4,056,148 |
| Lawrence | 179,766 | 34,919 | 214,685 |
| Mahoning | 63,974 | ..... | 63,974 |
| Medina | 12,465 | ..... | 12,465 |
| Meigs | 56,713 | 486,882 | 543,595 |
| Morgan ..... | ..... | 187,241 | 187,241 |
| Muskingum | 232,459 | 183,758 | 416,217 |
| Noble | 25,478 | 353,577 | 379,055 |
| Perry | 185,526 | 1,890,881 | 2,076,407 |
| Portage | 83,524 | 19,100 | 102,624 |
| Scioto | 8,916 | ..... | 8,916 |
| Stark | 394,596 | 63,796 | 458,392 |
| Summit | 54,954 | 23,314 | 78,268 |
| Trumbull | 5,405 | ..... | 5,405 |
| Tuscarawas | 960,247 | 553,653 | 1,513,900 |
| Vinton | 49,250 | 79,678 | 128,928 |
| Washington | 1,232 | ..... | 1,232 |
| Wayne | 84,550 | 2,437 | 86,987 |
| Total..... | 4,608,402 | 23,146,630 | 27,755,032 |

Per cent. of machine-mined coal..... 83.4
 Per cent. of pick-mined coal..... 16.6

TABLE SHOWING THE COAL TONNAGE OF THE STATE FOR 1909 AS
COMPARED WITH THE YEAR 1908.

| Counties. | 1908. | 1909. | Gain. | Loss. |
|------------------|------------|------------|-----------|---------|
| Athens | 4,170,995 | 4,354,074 | 183,079 | ..... |
| Belmont | 5,591,719 | 5,993,418 | 401,699 | ..... |
| Carroll | 439,080 | 398,085 | ..... | 40,995 |
| Columblana | 516,780 | 714,325 | 197,545 | ..... |
| Coshocton | 366,805 | 390,302 | 23,497 | ..... |
| Gallia | 13,692 | 9,920 | ..... | 3,772 |
| Guernsey | 2,926,448 | 3,108,686 | 182,238 | ..... |
| Harrison | 447,805 | 576,162 | 128,357 | ..... |
| Hocking | 1,282,647 | 1,036,743 | ..... | 245,904 |
| Holmes | 18,768 | 15,844 | ..... | 2,924 |
| Jackson | 836,997 | 823,034 | ..... | 13,963 |
| Jefferson | 3,565,008 | 4,056,148 | 491,140 | ..... |
| Lawrence | 180,265 | 214,685 | 34,420 | ..... |
| Mahoning | 86,326 | 63,974 | ..... | 22,352 |
| Medina | 18,103 | 12,465 | ..... | 5,638 |
| Meigs | 482,630 | 543,595 | 60,965 | ..... |
| Morgan | 217,036 | 187,241 | ..... | 29,795 |
| Muskingum | 436,947 | 416,217 | ..... | 20,730 |
| Noble | 208,192 | 379,055 | 170,863 | ..... |
| Perry | 2,108,050 | 2,076,407 | ..... | 31,643 |
| Portage | 88,543 | 102,624 | 14,081 | ..... |
| Scioto | 8,460 | 8,916 | 456 | ..... |
| Stark | 524,052 | 458,392 | ..... | 65,660 |
| Summit | 103,299 | 78,268 | ..... | 25,031 |
| Trumbull | 7,534 | 5,405 | ..... | 2,129 |
| Tuscarawas | 1,331,248 | 1,513,900 | 182,652 | ..... |
| Vinton | 183,542 | 128,928 | ..... | 54,614 |
| Washington | 1,304 | 1,232 | ..... | 72 |
| Wayne | 125,525 | 86,987 | ..... | 38,538 |
| Total..... | 26,287,800 | 27,755,032 | 2,070,992 | 603,760 |

Total tonnage for year 1909..... 27,755,032
Total tonnage for year 1908..... 26,287,800

Showing net gain for 1909..... 1,467,232

Total increase 2,070,992

Total decrease 603,760

Showing net gain of..... 1,467,232

TABLE SHOWING PRODUCTION OF PICK-MINED COAL BY COUNTIES
AND PERCENTAGE OF LUMP COAL DURING THE YEAR 1909.

| Counties. | Lump. | Nut. | Pea and Slack. | Total. | Per Cent. Lump Coal. |
|------------------|-----------|---------|----------------|-----------|----------------------|
| Athens | 104,108 | 20,807 | 31,016 | 155,931 | 66.8 |
| Belmont | 142,434 | 33,373 | 49,858 | 225,665 | 63.1 |
| Carroll | 42,201 | 9,990 | 12,667 | 64,858 | 65.1 |
| Columbiana | 191,563 | 49,485 | 47,900 | 288,948 | 66.3 |
| Coshocton | 135,052 | 39,982 | 52,866 | 227,900 | 59.3 |
| Gallia | 8,201 | 551 | 1,168 | 9,920 | 82.7 |
| Guernsey | 18,625 | 3,567 | 4,958 | 27,150 | 68.6 |
| Harrison | 27,065 | 5,424 | 7,245 | 39,734 | 68.1 |
| Hocking | 145,716 | 25,913 | 37,908 | 209,537 | 69.5 |
| Holmes | 9,402 | 3,328 | 3,114 | 15,844 | 59.3 |
| Jackson | 395,721 | 74,367 | 118,676 | 588,764 | 67.2 |
| Jefferson | 237,293 | 37,603 | 80,200 | 355,096 | 66.8 |
| Lawrence | 127,463 | 20,938 | 31,365 | 179,766 | 70.9 |
| Mahoning | 39,290 | 9,568 | 15,116 | 63,974 | 61.4 |
| Medina | 8,994 | 893 | 2,578 | 12,465 | 72.2 |
| Meigs | 40,100 | 5,188 | 11,425 | 56,713 | 70.7 |
| Morgan | | | | | |
| Muskingum | 164,784 | 27,351 | 40,324 | 232,459 | 70.9 |
| Noble | 19,594 | 1,620 | 4,264 | 25,478 | 76.9 |
| Perry | 130,236 | 20,816 | 34,474 | 185,526 | 70.2 |
| Portage | 59,057 | 9,805 | 14,662 | 83,524 | 70.7 |
| Scioto | 6,747 | 1,035 | 1,134 | 8,916 | 75.7 |
| Stark | 275,943 | 38,336 | 80,317 | 394,596 | 69.9 |
| Summit | 34,936 | 7,386 | 12,632 | 54,954 | 63.6 |
| Tumbull | 4,072 | 525 | 808 | 5,405 | 75.3 |
| Tuscarawas | 591,451 | 128,219 | 240,577 | 960,247 | 61.6 |
| Vinton | 31,703 | 6,317 | 11,230 | 49,250 | 64.4 |
| Washington | 838 | 148 | 246 | 1,232 | 68.0 |
| Wayne | 65,539 | 5,867 | 13,144 | 84,550 | 77.5 |
| Total | 3,058,128 | 588,402 | 961,872 | 4,608,402 | *66.4 |

*Average per cent. of lump coal in pick mines of the state.

Per cent. pick-mined coal, 16.6.

Loss in tonnage pick-mined coal as compared with year 1908, 68,467.

Average tons lump coal mined by each pick miner for year 1909, 395.

Average tons lump coal mined by each pick miner per day in 1909, 2.2.

Average tons run-of-mine coal mined by each pick miner for year 1909, 595.

Average tons run of mine coal mined by each pick miner per day in 1909, 3.3.

TABLE SHOWING TONS OF LUMP COAL MINED IN 1909, THE NUMBER OF PICK MINERS, AVERAGE DAYS WORKED, AND AVERAGE TONS PRODUCED BY EACH MAN PER DAY AND PER YEAR.

| Counties. | Number of Pick Miners Employed. | Average Days Pick Miners Worked. | Tons Lump Coal Pick Miners Produced. | Average Tons Mined by Each Miner for the Year 1909. | Average Tons Mined by Each Miner per Day. |
|------------------|---------------------------------|----------------------------------|--------------------------------------|---|---|
| Athens | 207 | 150 | 104,108 | 503 | 3.4 |
| Belmont | 348 | 172 | 142,434 | 409 | 2.4 |
| Carroll | 115 | 215 | 42,201 | 367 | 1.7 |
| Columblana | 522 | 219 | 191,563 | 367 | 1.7 |
| Coshocton | 313 | 196 | 135,052 | 431 | 2.2 |
| Gallia | 36 | 135 | 8,201 | 228 | 1.7 |
| Guernsey | 60 | 189 | 18,625 | 310 | 1.6 |
| Harrison | 91 | 211 | 27,065 | 297 | 1.4 |
| Hocking | 289 | 191 | 145,716 | 504 | 2.6 |
| Holmes | 37 | 190 | 9,402 | 254 | 1.3 |
| Jackson | 1,210 | 153 | 395,721 | 327 | 2.1 |
| Jefferson | 469 | 189 | 237,293 | 506 | 2.7 |
| Lawrence | 397 | 185 | 127,463 | 321 | 1.7 |
| Mahoning | 167 | 157 | 39,290 | 235 | 1.5 |
| Medina | 43 | 125 | 8,994 | 209 | 1.7 |
| Meigs | 144 | 157 | 40,100 | 278 | 1.8 |
| Morgan | | | | | |
| Muskingum | 357 | 189 | 164,784 | 462 | 2.4 |
| Noble | 75 | 148 | 19,594 | 261 | 1.8 |
| Perry | 231 | 174 | 130,236 | 564 | 3.2 |
| Portage | 159 | 208 | 59,057 | 371 | 1.8 |
| Scioto | 26 | 125 | 6,747 | 260 | 2.1 |
| Stark | 811 | 193 | 275,943 | 340 | 1.8 |
| Summit | 119 | 132 | 34,936 | 294 | 2.2 |
| Trumbull | 20 | 135 | 4,072 | 204 | 1.5 |
| Tuscarawas | 1,172 | 215 | 591,451 | 505 | 2.3 |
| Vinton | 175 | 98 | 31,703 | 181 | 1.8 |
| Washington | 1 | 260 | 838 | 838 | 3.2 |
| Wayne | 147 | 145 | 65,539 | 446 | 3.1 |
| Total..... | 7,741 | *182 | 3,058,128 | 395 | 2.2 |

*Note:—Average number days worked by pick miners, 182.

Average number tons lump coal mined by each man for year was 395.

Average number tons lump coal mined by each man per day, 2.2.

TABLE SHOWING PRODUCTION OF MACHINE-MINED COAL BY COUNTIES, AND PERCENTAGE OF LUMP COAL DURING THE YEAR 1909.

| Counties. | Lump. | Nut. | Pea and Slack. | Total. | Per Cent. of Lump Coal. |
|------------------|------------|-----------|----------------|------------|-------------------------|
| Athens | 2,956,182 | 546,135 | 695,826 | 4,198,143 | 70.4 |
| Belmont | 3,806,557 | 789,671 | 1,171,525 | 5,767,753 | 66.0 |
| Carroll | 227,863 | 37,700 | 67,664 | 333,227 | 68.4 |
| Columbiana | 277,902 | 67,197 | 80,278 | 425,377 | 65.3 |
| Coshocton | 102,362 | 21,576 | 38,464 | 162,402 | 63.0 |
| Gallia | * | * | * | * | * |
| Guernsey | 2,104,565 | 331,170 | 645,801 | 3,081,536 | 68.3 |
| Harrison | 317,906 | 84,404 | 134,118 | 536,428 | 59.3 |
| Hocking | 568,595 | 122,463 | 136,148 | 827,206 | 68.7 |
| Holmes | * | * | * | * | * |
| Jackson | 179,162 | 14,134 | 40,974 | 234,270 | 76.5 |
| Jefferson | 2,437,271 | 440,013 | 823,768 | 3,701,052 | 65.9 |
| Lawrence | 24,264 | 4,017 | 6,638 | 34,919 | 69.5 |
| Mahoning | * | * | * | * | * |
| Medina | * | * | * | * | * |
| Meigs | 326,331 | 42,988 | 117,563 | 486,882 | 67.0 |
| Morgan | 146,101 | 15,842 | 25,298 | 187,241 | 78.0 |
| Muskingum | 134,476 | 19,165 | 30,117 | 183,758 | 73.2 |
| Noble | 219,975 | 51,168 | 82,434 | 353,577 | 62.2 |
| Perry | 1,318,714 | 229,086 | 343,081 | 1,890,881 | 69.1 |
| Portage | 12,700 | 2,800 | 3,600 | 19,100 | 66.5 |
| Scioto | * | * | * | * | * |
| Stark | 47,335 | 5,817 | 10,644 | 63,796 | 74.2 |
| Summit | 12,040 | 5,894 | 5,380 | 23,314 | 51.6 |
| Trumbull | * | * | * | * | * |
| Tuscarawas | 371,693 | 63,301 | 118,659 | 553,653 | 67.1 |
| Vinton | 61,000 | 4,511 | 14,167 | 79,678 | 76.6 |
| Washington | * | * | * | * | * |
| Wayne | 1,950 | 191 | 296 | 2,437 | 80.0 |
| Total..... | 15,654,944 | 2,899,243 | 4,592,443 | 23,146,630 | †67.6 |

*No machine coal.

†Average per cent. lump coal in machine mines of the state.

Per cent. machine-mined coal, 83.4%.

Gain in tonnage machine-mined coal as compared with 1908.....1,535,699

Jefferson County shows a gain of.....451,279

Belmont County shows a gain of.....359,934

Athens County shows a gain of.....213,418

Guernsey County shows a gain of.....196,761

Columbiana County shows a gain of.....145,071

Tuscarawas County shows a gain of.....64,176

Hocking County shows a loss of.....292,680

TABLE SHOWING NUMBER OF RUNNERS AND LOADERS EMPLOYED DURING 1909. AVERAGE DAYS WORKED BY EACH. TOTAL TONS LUMP COAL PRODUCED BY EACH, AND AVERAGE TONS CUT AND LOADED BY EACH FOR EACH YEAR AND FOR EACH DAY.

| Counties. | Number Drillers, Shooters and Loaders Employed. | Number Machine Runners, Including Helpers, Employed. | Average Days Worked by Each Driller, Shooter and Loader. | Average Days Worked by Each Machine Runner. | Number Tons Lump Coal Produced in Machine Mines. | Average Tons Loaded by Each Driller, Shooter and Loader for Year. | Average Tons Loaded by Each Driller, Shooter and Loader per Day. | Average Tons Cut by Each Machine Runner for Year. | Average Tons Cut by Each Machine Runner per Day. |
|------------------|---|--|--|---|--|---|--|---|--|
| Athens | 4,813 | 496 | 158 | 158 | 2,956,182 | 614 | 3.9 | 5,960 | 37.7 |
| Belmont | 5,472 | 712 | 180 | 177 | 3,806,557 | 696 | 3.9 | 5,346 | 30.2 |
| Carroll | 346 | 60 | 203 | 206 | 227,863 | 659 | 3.2 | 3,798 | 18.4 |
| Columbiana | 446 | 73 | 234 | 231 | 277,902 | 623 | 2.7 | 3,807 | 16.5 |
| Coshocton | 240 | 41 | 136 | 149 | 102,362 | 427 | 3.1 | 2,497 | 16.8 |
| Gallia | | | | | | | | | |
| Guernsey | 2,956 | 328 | 169 | 173 | 2,104,565 | 712 | 4.2 | 6,416 | 37.1 |
| Harrison | 370 | 53 | 195 | 202 | 317,906 | 859 | 4.4 | 5,998 | 29.7 |
| Hocking | 1,112 | 122 | 142 | 137 | 568,595 | 511 | 3.6 | 4,661 | 34.0 |
| Holmes | | | | | | | | | |
| Jackson | 314 | 62 | 149 | 147 | 179,162 | 571 | 3.8 | 2,890 | 19.1 |
| Jefferson | 3,331 | 454 | 182 | 180 | 2,437,271 | 732 | 4.0 | 5,368 | 29.1 |
| Lawrence | 65 | 12 | 130 | 130 | 24,264 | 373 | 2.9 | 2,022 | 15.1 |
| Mahoning | | | | | | | | | |
| Medina | | | | | | | | | |
| Meigs | 471 | 76 | 205 | 211 | 326,331 | 693 | 3.4 | 4,294 | 20.1 |
| Morgan | 259 | 42 | 113 | 114 | 146,101 | 564 | 5.0 | 3,479 | 30.1 |
| Muskingum | 233 | 40 | 154 | 167 | 134,476 | 577 | 3.7 | 3,362 | 20.1 |
| Noble | 267 | 40 | 170 | 168 | 219,975 | 824 | 4.8 | 5,499 | 32.1 |
| Perry | 2,309 | 305 | 172 | 150 | 1,318,714 | 571 | 3.3 | 4,324 | 28.8 |
| Portage | 25 | 8 | 122 | 122 | 12,700 | 508 | 4.2 | 1,588 | 13.0 |
| Scioto | | | | | | | | | |
| Stark | 116 | 30 | 168 | 175 | 47,335 | 408 | 2.4 | 1,578 | 9.0 |
| Summit | 49 | 10 | 121 | 121 | 12,040 | 246 | 2.0 | 1,204 | 10.0 |
| Trumbull | | | | | | | | | |
| Tuscarawas | 483 | 170 | 195 | 186 | 371,693 | 770 | 3.9 | 2,186 | 11.8 |
| Vinton | 117 | 22 | 161 | 162 | 61,000 | 521 | 3.2 | 2,773 | 17.1 |
| Washington | | | | | | | | | |
| Wayne | 9 | 3 | 102 | 102 | 1,950 | 217 | 2.1 | 650 | 6.4 |
| Total | 23,803 | 3,159 | 1,172 | 1,171 | 15,654,944 | 658 | 3.8 | 4,956 | 29.0 |

Note:—Average tons lump coal cut by each machine runner for year.....4,956

Average tons lump coal cut by each machine runner for each day.....

Average tons coal loaded by each loader for year.....658

Average tons lump coal loaded by each loader per day.....3.8

Average days worked by drillers, shooters and loaders.

*Average days worked by machine runners.

SHOWING THE COAL OUTPUT SINCE 1872 IN PICK AND MACHINE MINES, AND THE TOTAL TONNAGE FOR EACH YEAR.

| Year. | Total Tonnage Pick Coal Produced Each Year Since 1872. | Total Tonnage Machine Coal Produced Since 1889 when Machinery was Used to Undercut Coal. | Total Number Tons Produced for Each Year Since 1872. | Gain. | Loss. |
|-------|--|--|--|-----------|-----------|
| ..... | 5,315,294 | ..... | 5,315,294 | ..... | ..... |
| ..... | 4,550,028 | ..... | 4,550,028 | ..... | 765,266 |
| ..... | 3,267,585 | ..... | 3,267,585 | ..... | 1,282,443 |
| ..... | 4,864,259 | ..... | 4,864,259 | 1,596,674 | ..... |
| ..... | 3,500,000 | ..... | 3,500,000 | ..... | 1,364,259 |
| ..... | 5,250,000 | ..... | 5,250,000 | 1,750,000 | ..... |
| ..... | 5,500,000 | ..... | 5,500,000 | 250,000 | ..... |
| ..... | 6,000,000 | ..... | 6,000,000 | 500,000 | ..... |
| ..... | 7,000,000 | ..... | 7,000,000 | 1,000,000 | ..... |
| ..... | 8,225,000 | ..... | 8,225,000 | 1,225,000 | ..... |
| ..... | 9,450,000 | ..... | 9,450,000 | 1,225,000 | ..... |
| ..... | 8,229,429 | ..... | 8,229,429 | ..... | 1,220,571 |
| ..... | 7,650,062 | ..... | 7,650,062 | ..... | 579,367 |
| ..... | 7,816,179 | ..... | 7,816,179 | 166,117 | ..... |
| ..... | 8,435,211 | ..... | 8,435,211 | 619,032 | ..... |
| ..... | 10,301,708 | ..... | 10,301,708 | 1,866,479 | ..... |
| ..... | 10,910,946 | ..... | 10,910,946 | 613,338 | ..... |
| ..... | 10,007,385 | 900,000 | 10,907,385 | ..... | 3,561 |
| ..... | 10,640,360 | 1,148,499 | 11,788,859 | 881,474 | ..... |
| ..... | 11,396,106 | 1,654,081 | 13,050,187 | 1,261,328 | ..... |
| ..... | 12,360,828 | 2,239,080 | 14,599,908 | 1,549,721 | ..... |
| ..... | 12,275,023 | 2,553,074 | 14,828,097 | 228,189 | ..... |
| ..... | 9,354,753 | 2,555,466 | 11,910,219 | ..... | 2,917,878 |
| ..... | 10,563,423 | 3,120,456 | 13,683,879 | 1,773,660 | ..... |
| ..... | 9,544,259 | 3,368,349 | 12,912,608 | ..... | 771,271 |
| ..... | 8,342,698 | 4,106,124 | 12,448,822 | ..... | 463,786 |
| ..... | 8,805,557 | 5,252,598 | 14,058,155 | 1,609,333 | ..... |
| ..... | 9,167,874 | 6,741,060 | 15,908,934 | 1,850,799 | ..... |
| ..... | 9,966,872 | 9,457,777 | 19,426,649 | 3,517,715 | ..... |
| ..... | 9,831,476 | 10,489,814 | 20,321,290 | 894,641 | ..... |
| ..... | 10,489,619 | 13,439,648 | 23,929,267 | 3,607,977 | ..... |
| ..... | 10,012,335 | 14,560,931 | 24,573,266 | 643,979 | ..... |
| ..... | 8,037,360 | 16,546,455 | 24,583,815 | 10,549 | ..... |
| ..... | 6,825,125 | 19,009,532 | 25,834,657 | 1,250,842 | ..... |
| ..... | 6,500,263 | 20,713,232 | 27,213,495 | 1,378,838 | ..... |
| ..... | 6,511,773 | 25,854,176 | 32,365,949 | 5,152,454 | ..... |
| ..... | 4,676,869 | 21,610,931 | 26,287,800 | ..... | 6,078,149 |
| ..... | 4,608,402 | 23,146,630 | 27,755,032 | 1,467,232 | ..... |

TABLE SHOWING ANNUAL PRODUCTION OF PICK AND MACHINE-MINED COAL, AND THE GAIN AND LOSS SINCE THE YEAR 1889 OR THE INTRODUCTION OF MINING MACHINERY.

| Year. | Total Tons Pick Coal Produced Since 1889. | Gain. | Loss. | Total Tons Machine Coal Produced Since 1889. | Gain. | Loss. |
|-----------|---|-----------|-----------|--|-----------|-----------|
| 1889..... | 10,007,385 | ..... | ..... | 900,000 | ..... | ..... |
| 1890..... | 10,640,360 | 632,975 | ..... | 1,148,499 | 248,499 | ..... |
| 1891..... | 11,396,106 | 755,746 | ..... | 1,654,081 | 505,632 | ..... |
| 1892..... | 12,360,828 | 964,722 | ..... | 2,239,080 | 584,999 | ..... |
| 1893..... | 12,275,023 | ..... | 85,805 | 2,553,074 | 313,994 | ..... |
| 1894..... | 9,354,753 | ..... | 2,920,270 | 2,555,466 | 2,392 | ..... |
| 1895..... | 10,563,423 | 1,208,670 | ..... | 3,120,456 | 564,990 | ..... |
| 1896..... | 9,544,259 | ..... | 1,019,164 | 3,368,349 | 247,893 | ..... |
| 1897..... | 8,342,698 | ..... | 1,201,561 | 4,106,124 | 737,775 | ..... |
| 1898..... | 8,805,557 | 462,859 | ..... | 5,252,598 | 1,146,474 | ..... |
| 1899..... | 9,167,874 | 362,317 | ..... | 6,741,060 | 1,488,462 | ..... |
| 1900..... | 9,966,872 | 798,998 | ..... | 9,457,777 | 2,716,717 | ..... |
| 1901..... | 9,831,476 | ..... | 135,396 | 10,489,814 | 1,032,037 | ..... |
| 1902..... | 10,489,619 | 658,143 | ..... | 13,439,648 | 2,949,834 | ..... |
| 1903..... | 10,012,335 | ..... | 477,284 | 14,560,931 | 1,121,285 | ..... |
| 1904..... | 8,037,360 | ..... | 1,974,975 | 16,546,455 | 1,985,524 | ..... |
| 1905..... | 6,825,125 | ..... | 1,212,235 | 19,009,532 | 2,463,077 | ..... |
| 1906..... | 6,500,263 | ..... | 324,862 | 20,713,232 | 1,703,700 | ..... |
| 1907..... | 6,511,773 | 11,510 | ..... | 25,854,176 | 5,140,944 | ..... |
| 1908..... | 4,676,869 | ..... | 1,834,904 | 21,610,931 | ..... | 4,243,245 |
| 1909..... | 4,608,402 | ..... | 68,467 | 23,146,630 | 1,535,699 | ..... |

TABLE SHOWING THE NUMBER OF COMPANIES WHO REPORTED AS HANDLING POWDER, AND THE NUMBER NOT REPORTING, IN THE PICK AND MACHINE MINES IN THE COUNTIES OF THE STATE FOR THE YEAR 1909.

| Counties. | Companies Who Reported Powder. | Companies Failing to Report Powder. | Number of Kegs Reported by Pick Mines. | Number of Kegs Reported by Machine Mines. | Total Number Kegs of Powder Reported. |
|------------------|--------------------------------|-------------------------------------|--|---|---------------------------------------|
| Athens | 36 | 7 | 2,371 | 24,950 | 27,321 |
| Belmont | 48 | 35 | 1,049 | 21,879 | 22,928 |
| Carroll | 21 | 7 | 2,063 | 2,081 | 4,144 |
| Columbiana | 26 | 16 | 8,167 | 3,061 | 11,228 |
| Coshocton | 15 | 18 | 5,106 | 1,389 | 6,495 |
| Gallia | 8 | 2 | 265 | ..... | 265 |
| Guernsey | 26 | 9 | 374 | 21,281 | 21,655 |
| Harrison | 11 | 30 | 108 | 3,539 | 3,647 |
| Hocking | 18 | 3 | 2,737 | 4,552 | 7,289 |
| Holmes | 8 | 4 | 172 | ..... | 172 |
| Jackson | 62 | 18 | 26,138 | 2,367 | 28,505 |
| Jefferson | 27 | 30 | 634 | 12,702 | 13,336 |
| Lawrence | 29 | 13 | 5,141 | 566 | 5,707 |
| Mahoning | 8 | 14 | 1,930 | ..... | 1,930 |
| Medina | 7 | 1 | 442 | ..... | 442 |
| Meigs | 21 | 16 | 499 | 3,051 | 3,550 |
| Morgan | 3 | ..... | ..... | 684 | 684 |
| Muskingum | 18 | 42 | 9,018 | 1,344 | 10,362 |
| Noble | 19 | 17 | 270 | 2,722 | 2,992 |
| Perry | 46 | 12 | 3,648 | 14,967 | 18,615 |
| Portage | 4 | 1 | 4,025 | 420 | 4,445 |
| Scioto | 3 | 1 | 714 | ..... | 714 |
| Stark | 35 | 21 | 13,301 | 1,037 | 14,338 |
| Summit | 7 | 1 | 2,666 | 473 | 3,139 |
| Trumbull | 5 | 4 | 87 | ..... | 87 |
| Tuscarawas | 53 | 22 | 22,748 | 4,445 | 27,193 |
| Vinton | 10 | 3 | 1,990 | 756 | 2,746 |
| Washington | 1 | ..... | 44 | ..... | 44 |
| Wayne | 7 | 3 | 4,405 | 48 | 4,453 |
| Total..... | 582 | 350 | 120,112 | 128,314 | 248,426 |

N. B.—This table does not show all the powder used in the production of coal; many miners buy powder independent of the companies, and it is not reported.

TABLE SHOWING THE NUMBER OF MACHINE RUNNERS, DRILLERS, SHOOTERS AND LOADERS, INSIDE AND OUTSIDE HANDS, NUMBER OF KEGS OF POWDER USED, AND TOTAL TONNAGE OF MACHINE MINES FOR THE YEAR 1909.

| Counties. | Number of Runners. | Number of Loaders. | Number of Inside Day Hands. | Number of Outside Day Hands. | Total Number Men Employed. | Kegs of Powder Used in Machine Mines. | Total Number Tons Machine-Mined Coal. | Per Cent. Machine-Mined Coal as Compared with Total Output in County. | Average Number Days Worked by Runners. | Average Number Days Worked by Drillers, Shooters and Loaders. |
|------------------|--------------------|--------------------|-----------------------------|------------------------------|----------------------------|---------------------------------------|---------------------------------------|---|--|---|
| Athens | 496 | 4,813 | 1,238 | 749 | 7,296 | 24,950 | 4,198,143 | 96.4 | 158 | 158 |
| Belmont | 712 | 5,472 | 1,268 | 624 | 8,076 | 21,879 | 5,767,753 | 96.2 | 177 | 180 |
| Carroll | 60 | 346 | 94 | 49 | 549 | 2,081 | 333,227 | 83.7 | 206 | 203 |
| Columbiana | 73 | 446 | 149 | 80 | 748 | 3,061 | 425,377 | 59.5 | 231 | 234 |
| Coshocton | 41 | 240 | 64 | 41 | 386 | 1,389 | 162,402 | 41.6 | 149 | 136 |
| Gallia | 328 | 2,956 | 1,116 | 327 | 4,727 | 21,281 | 3,081,536 | 99.1 | 173 | 169 |
| Guernsey | 53 | 370 | 94 | 75 | 592 | 3,539 | 536,428 | 93.1 | 202 | 195 |
| Harrison | 122 | 1,112 | 244 | 198 | 1,676 | 4,552 | 827,206 | 79.8 | 137 | 142 |
| Hocking | 62 | 314 | 139 | 55 | 570 | 2,367 | 234,270 | 28.5 | 147 | 149 |
| Holmes | 454 | 3,331 | 783 | 547 | 5,115 | 12,702 | 3,701,052 | 91.2 | 180 | 182 |
| Jackson | 12 | 65 | 20 | 10 | 107 | 566 | 34,919 | 16.3 | 130 | 130 |
| Jefferson | 76 | 471 | 128 | 86 | 761 | 3,051 | 486,882 | 89.6 | 211 | 205 |
| Lawrence | 42 | 259 | 59 | 38 | 398 | 684 | 187,241 | 100.0 | 114 | 113 |
| Mahoning | 40 | 233 | 46 | 39 | 358 | 1,344 | 183,758 | 44.1 | 167 | 154 |
| Medina | 40 | 267 | 80 | 22 | 409 | 2,722 | 353,577 | 93.3 | 168 | 170 |
| Meigs | 305 | 2,309 | 535 | 378 | 3,527 | 14,967 | 1,890,881 | 91.1 | 150 | 172 |
| Morgan | 8 | 25 | 10 | 9 | 52 | 420 | 19,100 | 18.6 | 122 | 122 |
| Muskingum | 30 | 116 | ... | ... | 146 | 1,037 | 63,796 | 13.9 | 175 | 168 |
| Noble | 10 | 49 | 13 | 11 | 83 | 473 | 23,314 | 29.8 | 121 | 121 |
| Perry | 170 | 483 | 144 | 107 | 904 | 4,445 | 553,653 | 36.6 | 186 | 195 |
| Portage | 22 | 117 | 33 | 19 | 191 | 756 | 79,678 | 61.8 | 162 | 161 |
| Scioto | 3 | 9 | 1 | 1 | 14 | 48 | 2,437 | 2.8 | 102 | 102 |
| Stark | 10 | 49 | 13 | 11 | 83 | 473 | 23,314 | 29.8 | 121 | 121 |
| Summit | 170 | 483 | 144 | 107 | 904 | 4,445 | 553,653 | 36.6 | 186 | 195 |
| Trumbull | 22 | 117 | 33 | 19 | 191 | 756 | 79,678 | 61.8 | 162 | 161 |
| Tuscarawas | 3 | 9 | 1 | 1 | 14 | 48 | 2,437 | 2.8 | 102 | 102 |
| Vinton | 10 | 49 | 13 | 11 | 83 | 473 | 23,314 | 29.8 | 121 | 121 |
| Washington | 170 | 483 | 144 | 107 | 904 | 4,445 | 553,653 | 36.6 | 186 | 195 |
| Wayne | 22 | 117 | 33 | 19 | 191 | 756 | 79,678 | 61.8 | 162 | 161 |
| Total | 3,159 | 23,803 | 6,258 | 3,465 | 36,685 | 128,314 | 23,146,630 | †83.4 | *171 | *172 |

*Average days worked for the year.

Note—†Per cent. of machine-mined coal for the state.

TABLE SHOWING COMPARISON FOR YEARS 1908 AND 1909 PERTAINING TO THE NUMBER OF MINING MACHINES IN OPERATION, AVERAGE NUMBER TONS OF RUN-OF-MINE CUT BY EACH RUNNER FOR THE YEAR AND FOR EACH DAY; ALSO NUMBER OF TONS CUT BY EACH MACHINE FOR THE YEAR AND FOR EACH DAY.

| Counties. | Number Mining Machines in Use in 1908. | Number Mining Machines in Use in 1909. | Gain. | Loss. | Average Tons Run-of-Mine Cut by Each Runner in 1908. | Average Tons Run-of-Mine Cut by Each Runner in 1909. | Average Tons Run-of-Mine Cut by Each Runner per Day in 1908. | Average Tons Run-of-Mine Cut by Each Runner per Day in 1909. | Average Tons Cut by Each Machine in 1908. | Average Tons Cut by Each Machine in 1909. | Average Tons Cut by Each Machine per Day in 1908. | Average Tons Cut by Each Machine per day in 1909. |
|------------------|--|--|-------|-------|--|--|--|--|---|---|---|---|
| Athens | 195 | 169 | .. | 26 | 8,066 | 8,464 | 57.6 | 53.6 | 20,434 | 24,841 | 146.0 | 157.2 |
| Belmont | 280 | 283 | 3 | .. | 7,368 | 8,101 | 43.3 | 45.8 | 19,314 | 20,381 | 113.6 | 115.1 |
| Carroll | 29 | 33 | 4 | .. | 5,448 | 5,554 | 37.8 | 27.0 | 10,520 | 10,098 | 73.0 | 49.0 |
| Columbiana | 38 | 35 | .. | 3 | 4,380 | 5,827 | 26.2 | 25.2 | 7,376 | 12,154 | 44.2 | 52.6 |
| Coshocton | 15 | 25 | 10 | .. | 4,877 | 3,961 | 29.0 | 26.6 | 9,105 | 6,496 | 54.2 | 43.6 |
| Gallia | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Guernsey | 116 | 127 | 11 | .. | 9,129 | 9,395 | 54.7 | 54.3 | 24,869 | 24,264 | 148.9 | 140.3 |
| Harrison | 21 | 24 | 3 | .. | 7,814 | 10,121 | 42.0 | 50.1 | 19,350 | 22,351 | 104.0 | 110.6 |
| Hocking | 50 | 47 | .. | 3 | 8,615 | 6,780 | 52.5 | 49.5 | 22,398 | 17,600 | 136.6 | 128.5 |
| Holmes | 73 | 41 | .. | 32 | 1,146 | 3,779 | 28.4 | 25.7 | 3,748 | 5,714 | 25.7 | 38.9 |
| Jackson | 238 | 238 | .. | .. | 6,756 | 8,152 | 40.7 | 45.3 | 13,635 | 15,551 | 82.3 | 86.4 |
| Jefferson | 2 | 6 | 4 | .. | 3,445 | 2,910 | 19.7 | 22.4 | 20,698 | 5,820 | 118.1 | 44.8 |
| Lawrence | 1 | .. | .. | 1 | 1,810 | .. | 47.6 | .. | 3,623 | .. | 32.6 | .. |
| Mahoning | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Medina | 35 | 38 | 3 | .. | 4,976 | 6,403 | 33.4 | 30.4 | 9,099 | 12,813 | 61.1 | 60.7 |
| Meigs | 14 | 14 | .. | .. | 5,047 | 4,453 | 33.8 | 39.1 | 15,503 | 13,374 | 119.3 | 117.3 |
| Morgan | 24 | 20 | .. | 4 | 3,134 | 4,534 | 23.7 | 27.5 | 5,614 | 9,188 | 42.5 | 55.0 |
| Muskingum | 11 | 13 | 2 | .. | 5,903 | 8,833 | 56.8 | 52.6 | 16,644 | 27,198 | 160.0 | 161.9 |
| Noble | 153 | 126 | .. | 27 | 5,984 | 6,200 | 45.7 | 41.3 | 12,515 | 15,007 | 95.5 | 100.0 |
| Perry | 8 | 12 | 4 | .. | 1,432 | 2,338 | 10.3 | 19.6 | 2,148 | 1,592 | 15.5 | 13.0 |
| Portage | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Scioto | 29 | 33 | 1 | .. | 3,189 | 2,127 | 21.0 | 12.2 | 2,630 | 2,127 | 17.4 | 12.2 |
| Stark | 3 | 3 | .. | .. | 3,883 | 2,331 | 31.8 | 19.3 | 12,943 | 7,771 | 103.1 | 64.2 |
| Summit | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Trumbull | 85 | 102 | 17 | .. | 3,680 | 3,257 | 19.7 | 17.5 | 5,758 | 5,428 | 30.8 | 29.2 |
| Tuscarawas | 22 | 7 | .. | 15 | 2,506 | 3,622 | 19.0 | 22.4 | 5,095 | 11,383 | 43.1 | 70.3 |
| Vinton | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Washington | 3 | 2 | .. | 1 | 845 | 812 | 30.1 | 8.0 | 563 | 1,219 | 20.1 | 12.0 |
| Wayne | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Total | 1,445 | 1,395 | 62 | 112 | 6,823 | 7,327 | 43.5 | 42.8 | 14,956 | 16,593 | 95.3 | 97.0 |

Note—

Number mining machines in operation in 1909..... 1,395
 Number mining machines in operation in 1908..... 1,445

Decrease as compared with 1908 50

Average number of tons "Run of Mine" cut by each runner for the year 1909..... 7,327

Average number of tons "Run of Mine" cut by each runner for the year 1908..... 6,823

Increase, as compared with 1908 504

Average number tons "Run of Mine" cut by each runner per day for the year 1909..... 42.8

Average number tons of "Run of Mine" cut by each runner per day for the year 1908..... 43.5

Decrease as compared with 1908 7

Average number tons "Run of Mine" cut by each machine for the year 1909 16,593

Average number tons "Run of Mine" cut by each machine for the year 1908..... 14,956

Increase as compared with 1908..... 1,637

Average number tons "Run of Mine" cut by each machine per day in 1909..... 97.0

Average number tons "Run of Mine" cut by each machine per day in 1908..... 95.3

Increase as compared with 1908..... 1.7

TABLE SHOWING NUMBER OF DAYS WORKED BY PICK MINERS, DRILLERS, SHOOTERS AND LOADERS AND MACHINE RUNNERS, AND TONS LUMP COAL PRODUCED BY EACH PER YEAR AND PER DAY IN 1909, AS COMPARED WITH THE YEAR 1908.

| Counties. | Average Days Pick Miners | | Average Days Drillers, Shooters and Loaders Worked in 1909. | | Average Days Machine Runners | | Average No. Tons Lump Coal Produced by Each Pick Miner in 1909. | | Average No. Tons Lump Coal Produced by Each Drill, Shooter and Loader for 1909. | | Average No. Tons Lump Coal Loaded by Each Driller, Shooter and Loader per Day in 1909. | | Average No. Tons Lump Coal Cut by Each Machine Runner for 1909. | | Average No. Tons Lump Coal Cut by Each Machine Runner per Day in 1909. | | Average No. Tons Lump Coal Cut by Each Machine Runner per Day in 1908. | |
|------------------|--------------------------|-------|---|-------|------------------------------|-------|---|-------|---|-------|--|-------|---|-------|--|-------|--|-------|
| | 1908. | 1909. | 1908. | 1909. | 1908. | 1909. | 1908. | 1909. | 1908. | 1909. | 1908. | 1909. | 1908. | 1909. | 1908. | 1909. | 1908. | 1909. |
| Athens | 150 | 150 | 138 | 158 | 140 | 158 | 428 | 503 | 540 | 614 | 4.0 | 3.9 | 5.843 | 5.960 | 41.7 | 37.7 | 28.1 | 30.2 |
| Belmont | 155 | 172 | 174 | 180 | 170 | 177 | 430 | 409 | 644 | 696 | 3.7 | 3.9 | 4.784 | 5.346 | 28.1 | 30.2 | 26.9 | 18.4 |
| Carroll | 197 | 215 | 143 | 203 | 144 | 206 | 428 | 367 | 783 | 859 | 5.5 | 3.2 | 3.867 | 3.798 | 26.9 | 18.4 | 16.5 | 16.5 |
| Columbiana | 175 | 219 | 166 | 234 | 167 | 231 | 336 | 367 | 474 | 623 | 2.6 | 2.7 | 2.860 | 3.807 | 18.2 | 16.5 | 20.3 | 16.8 |
| Coshocton | 194 | 196 | 180 | 136 | 168 | 149 | 433 | 431 | 821 | 427 | 4.6 | 3.1 | 3.402 | 2.497 | 20.3 | 16.8 | 20.3 | 16.8 |
| Galla | 75 | 135 | ..... | ..... | ..... | ..... | 116 | 228 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Guernsey | 141 | 189 | 168 | 169 | 167 | 173 | 238 | 310 | 648 | 712 | 3.9 | 4.2 | 6.187 | 6.416 | 37.0 | 37.1 | 37.0 | 37.1 |
| Harrison | 203 | 211 | 186 | 195 | 186 | 202 | 292 | 297 | 630 | 859 | 3.4 | 4.4 | 4.540 | 5.998 | 24.4 | 29.7 | 24.4 | 29.7 |
| Hocking | 191 | 191 | 163 | 142 | 164 | 137 | 450 | 504 | 575 | 511 | 3.5 | 3.6 | 6.086 | 4.661 | 37.1 | 34.0 | 37.1 | 34.0 |
| Holmes | 173 | 190 | ..... | ..... | ..... | ..... | 242 | 254 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Jackson | 146 | 153 | 149 | 149 | 146 | 147 | 309 | 327 | 527 | 571 | 3.5 | 2.8 | 3.084 | 2.890 | 21.1 | 19.7 | 21.1 | 19.7 |
| Jefferson | 191 | 189 | 166 | 182 | 166 | 180 | 433 | 506 | 561 | 732 | 2.4 | 4.0 | 4.368 | 2.868 | 26.1 | 29.8 | 26.1 | 29.8 |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Scioto | 113 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 12 |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----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| | |
|---|-------|
| Average number days worked by Pick Miners in 1908..... | 160. |
| Average number days worked by Pick Miners in 1909..... | 182 |
| Average number days worked by Drillers, Shooters and Loaders in 1908..... | 157 |
| Average number days worked by Drillers, Shooters and Loaders in 1909..... | 172 |
| Average number days worked by Machine Runners in 1908..... | 167 |
| Average number days worked by Machine Runners in 1909..... | 171 |
| Average number tons lump coal mined by each Pick Miner for year 1908..... | 350 |
| Average number tons lump coal mined by each Pick Miner for year 1909..... | 395 |
| Average number tons lump coal mined by each Pick Miner per day in 1908..... | 2.2 |
| Average number tons lump coal mined by each Pick Miner per day in 1909..... | 2.2 |
| Average number tons lump coal loaded by each Driller, Shooter and Loader for 1908..... | 589 |
| Average number tons lump coal loaded by each Driller, Shooter and Loader for 1909..... | 658 |
| Average number tons lump coal loaded by each Driller, Shooter and Loader per day in 1908..... | 3.8 |
| Average number tons lump coal loaded by each Driller, Shooter and Loader per day in 1909..... | 3.8 |
| Average number tons lump coal cut by each Machine Runner for year 1908..... | 4,627 |
| Average number tons lump coal cut by each Machine Runner for year 1909..... | 4,956 |
| Average number tons lump coal cut by each Machine Runner per day in 1908..... | 29.5 |
| Average number tons lump coal cut by each Machine Runner per day in 1909..... | 29.0 |

TABLE SHOWING TOTAL TONS RUN-OF-MINE COAL PRODUCED, AVERAGE TONS PRODUCED IN BOTH PICK AND MACHINE MINES FOR EACH MINER, RUNNER AND LOADER FOR THE YEAR AND FOR EACH DAY.

| Counties. | No. Tons Mined With Pick. | No. Tons Mined With Machine. | Average No. Tons Run-of-Mine Mined by Each Pick Miner per Year in Pick Mines. | Average No. Tons Run-of-Mine Mined by Each Pick Miner per Day in Pick Mines. | Average No. Tons Run-of-Mine Cut by Each Runner per Year in Machine Mines. | Average No. Tons Run-of-Mine Cut by Each Runner per Day in Machine Mines. | Average No. Tons Run-of-Mine Loaded by Each Loader per Year in Machine Mines. | Average No. Tons Run-of-Mine Loaded by Each Loader per Day in Machine Mines. |
|------------------|---------------------------|------------------------------|---|--|--|---|---|--|
| Athens | 155,931 | 4,198,143 | 753 | 5.0 | 8,464 | 53.6 | 872 | 5.5 |
| Belmont | 225,665 | 5,767,753 | 648 | 3.8 | 8,101 | 45.8 | 1,054 | 5.9 |
| Carroll | 64,858 | 333,227 | 564 | 2.6 | 5,554 | 27.0 | 963 | 4.7 |
| Columblana | 288,948 | 425,377 | 554 | 2.5 | 5,827 | 25.2 | 954 | 4.1 |
| Coshocton | 227,900 | 162,402 | 728 | 3.7 | 3,961 | 26.6 | 677 | 5.0 |
| Gallia | 9,920 | ..... | 276 | 2.0 | ..... | ..... | ..... | ..... |
| Guernsey | 27,150 | 3,081,536 | 453 | 2.4 | 9,395 | 54.3 | 1,042 | 6.2 |
| Harrison | 39,734 | 536,428 | 437 | 2.1 | 10,121 | 50.1 | 1,450 | 7.4 |
| Hocking | 209,537 | 827,206 | 725 | 3.8 | 6,780 | 49.5 | 744 | 5.2 |
| Holmes | 15,844 | ..... | 428 | 2.3 | ..... | ..... | ..... | ..... |
| Jackson | 588,764 | 234,270 | 487 | 3.2 | 3,779 | 25.7 | 746 | 5.0 |
| Jefferson | 355,096 | 3,701,052 | 757 | 4.0 | 8,152 | 45.3 | 1,111 | 6.1 |
| Lawrence | 179,766 | 34,919 | 453 | 2.4 | 2,910 | 22.4 | 537 | 4.1 |
| Mahoning | 63,974 | ..... | 383 | 2.4 | ..... | ..... | ..... | ..... |
| Medina | 12,465 | ..... | 290 | 2.3 | ..... | ..... | ..... | ..... |
| Meigs | 56,713 | 486,882 | 394 | 2.5 | 6,406 | 30.4 | 1,034 | 5.0 |
| Morgan ..... | ..... | 187,241 | ..... | ..... | 4,458 | 39.1 | 723 | 6.4 |
| Muskingum | 232,459 | 183,758 | 651 | 3.4 | 4,594 | 27.5 | 789 | 5.1 |
| Noble | 25,478 | 353,577 | 340 | 2.3 | 8,839 | 52.6 | 1,324 | 7.8 |
| Perry | 185,526 | 1,890,881 | 803 | 4.6 | 6,200 | 41.3 | 819 | 4.8 |
| Portage | 83,524 | 19,100 | 525 | 2.5 | 2,388 | 19.6 | 764 | 6.3 |
| Scioto | 8,916 | ..... | 343 | 2.7 | ..... | ..... | ..... | ..... |
| Stark | 391,596 | 63,796 | 487 | 2.5 | 2,127 | 12.2 | 550 | 3.3 |
| Summit | 54,954 | 23,314 | 462 | 3.5 | 2,331 | 19.3 | 476 | 3.9 |
| Trumbull | 5,405 | ..... | 270 | 2.0 | ..... | ..... | ..... | ..... |
| Tuscarawas | 960,247 | 553,653 | 819 | 3.8 | 3,257 | 17.5 | 1,146 | 5.9 |
| Vinton | 49,250 | 79,678 | 281 | 2.9 | 3,622 | 22.4 | 681 | 4.2 |
| Washington | 1,232 | ..... | 1,232 | 4.7 | ..... | ..... | ..... | ..... |
| Wayne | 81,550 | 2,437 | 575 | 4.0 | 812 | 8.0 | 271 | 2.7 |
| Total | 4,608,402 | 23,146,630 | *595 | *3.3 | *7,327 | *42.8 | *972 | *5.7 |

Note—*Average for state.

TABLE SHOWING THE NUMBER OF TONS OF PICK AND MACHINE COAL, ALSO TOTAL TONS PRODUCED, THE PER CENT. OF MACHINE COAL AS COMPARED WITH THE TOTAL TONNAGE, THE NUMBER OF PICK MINERS, MACHINE RUNNERS AND DRILLERS, SHOOTERS AND LOADERS EMPLOYED, THE NUMBER TONS LUMP COAL PRODUCED BY EACH PICK MINER, LOADER AND RUNNER FOR THE YEAR 1909, THE NUMBER OF DAY HANDS EMPLOYED, AND THE AVERAGE NUMBER OF TONS OF RUN-OF-MINE PRODUCED BY EACH.

| Counties. | Total Tons Pick Coal Mined in 1909 | Total Tons Machine Coal Mined in 1909 | Total Tons Pick and Machine Coal Mined in 1909 | Per Cent. of Machine | Total Number Pick Miners | Total Number Machine Runners | Total Number Shooters and Loaders | Average No. Days Worked in Pick Mines in 1909 | Average No. Days Worked in Machine Mines in 1909 | Average No. Tons Lump Coal Mined for each Pick Miner for 1909 | Average No. Tons Lump Coal Loaded by Each Driller, Shooter and Loader for 1909 | Average No. Tons Lump Coal Cut by Each Machine Runner in 1909 | Total No. Day Hands, Inside and Outside, in both Pick and Machine Mines | Average No. Tons Run-Of-Mine Produced for Each Day Hand in Both Pick and Machine Mines for 1909 |
|-----------------|------------------------------------|---------------------------------------|--|----------------------|--------------------------|------------------------------|-----------------------------------|---|--|---|--|---|---|---|
| Athena..... | 155,931 | 4,198,143 | 4,354,074 | 96.4 | 207 | 496 | 4,813 | 150 | 158 | 503 | 614 | 5,900 | 2,041 | 2,133 |
| Bellmont..... | 225,065 | 6,767,753 | 6,992,818 | 96.2 | 348 | 712 | 5,472 | 172 | 177 | 409 | 696 | 5,346 | 1,975 | 3,035 |
| Carroll..... | 64,868 | 333,327 | 398,195 | 83.7 | 115 | 60 | 346 | 215 | 206 | 367 | 639 | 3,798 | 183 | 3,175 |
| Columbia..... | 288,948 | 425,377 | 714,325 | 59.5 | 522 | 73 | 440 | 219 | 231 | 367 | 623 | 3,807 | 397 | 1,769 |
| Concho..... | 227,900 | 162,402 | 390,302 | 41.6 | 313 | 41 | 240 | 196 | 149 | 431 | 427 | 2,467 | 296 | 1,595 |
| Galien..... | 9,930 | | 9,930 | | 36 | | | 135 | | 228 | | | 12 | 1,827 |
| Guernsey..... | 27,150 | 3,081,536 | 3,108,686 | 99.1 | 60 | 328 | 2,956 | 189 | 173 | 310 | 712 | 6,416 | 1,451 | 2,142 |
| Harrison..... | 39,734 | 536,428 | 576,162 | 93.1 | 91 | 53 | 370 | 211 | 202 | 297 | 859 | 5,998 | 195 | 2,055 |
| Hocking..... | 209,527 | 827,306 | 1,036,833 | 79.8 | 289 | 122 | 1,112 | 191 | 137 | 504 | 511 | 4,661 | 497 | 2,086 |
| Holmes..... | 15,844 | | 15,844 | | 37 | | | 190 | | 254 | | | 8 | 1,981 |
| Jackson..... | 588,764 | 234,370 | 823,134 | 28.5 | 1,210 | 62 | 914 | 153 | 147 | 327 | 571 | 2,890 | 799 | 1,030 |
| Jefferson..... | 355,096 | 3,701,052 | 4,056,148 | 91.2 | 469 | 454 | 3,311 | 189 | 180 | 546 | 732 | 5,368 | 1,443 | 2,811 |
| Lawrence..... | 179,766 | 34,919 | 214,685 | 16.3 | 397 | 12 | 65 | 185 | 130 | 321 | 373 | 2,042 | 117 | 1,835 |
| Madison..... | 63,974 | | 63,974 | | 167 | | | 125 | | 295 | | | 43 | 1,484 |
| Medina..... | 12,465 | | 12,465 | | 43 | | | 157 | | 269 | | | 16 | 779 |
| Meigs..... | 56,713 | 456,882 | 513,595 | 89.6 | 144 | 76 | 471 | 157 | 211 | 278 | 693 | 4,204 | 253 | 2,149 |
| Morgan..... | 187,241 | | 187,241 | 100.0 | | 42 | 259 | | | | | 3,479 | 97 | 1,330 |
| Muskingum..... | 292,459 | 183,758 | 476,217 | 44.1 | 357 | 40 | 233 | 189 | 167 | 462 | 577 | 3,362 | 168 | 2,477 |
| Noble..... | 25,478 | 353,577 | 379,055 | 93.3 | 75 | 40 | 267 | 148 | 168 | 261 | 824 | 5,499 | 110 | 3,446 |
| Perry..... | 185,536 | 1,890,881 | 2,076,417 | 91.1 | 231 | 305 | 2,369 | 174 | 150 | 564 | 571 | 4,324 | 994 | 2,089 |
| Portage..... | 83,524 | 199,100 | 282,624 | 18.6 | 159 | 8 | 25 | 208 | 122 | 371 | 508 | 1,588 | 100 | 1,026 |
| Scioto..... | 8,916 | | 8,916 | | 26 | | | 125 | | 240 | | | 16 | 557 |
| Stark..... | 394,566 | 63,796 | 458,362 | 13.9 | 811 | 39 | 116 | 193 | 175 | 340 | 408 | 4,578 | 297 | 1,543 |
| Summit..... | 54,064 | 23,314 | 77,378 | 29.8 | 119 | 10 | 49 | 135 | 121 | 204 | 246 | 1,204 | 55 | 1,423 |
| Trumbull..... | 5,405 | | 5,405 | | 20 | | | 132 | | 204 | | | 7 | 772 |
| Tuscarawas..... | 900,247 | 553,653 | 1,453,900 | 36.6 | 1,172 | 170 | 483 | 215 | 186 | 505 | 770 | 2,186 | 862 | 2,287 |
| Vinton..... | 49,250 | 79,678 | 128,928 | 61.8 | 175 | 22 | 117 | 98 | 162 | 181 | 521 | 2,773 | 79 | 1,632 |
| Washington..... | 1,232 | | 1,232 | | 1 | | | 260 | | 838 | | | | 916 |
| Wayne..... | 84,550 | 2,437 | 86,987 | 2.8 | 147 | 3 | 9 | 145 | 102 | 446 | 217 | 650 | 95 | 916 |
| Total..... | 4,608,402 | 23,140,630 | 27,755,032 | 83.4 | 7,741 | 3,159 | 23,893 | *182 | *171 | *305 | *658 | *4,956 | 12,316 | *2,254 |

*Average for State.

PERSONS EMPLOYED

TABLE SHOWING NUMBER PICK MINERS, INSIDE AND OUTSIDE DAY HANDS, TOTAL PICK TONNAGE, THE PER CENT. AS COMPARED WITH TOTAL OUTPUT OF EACH COUNTY, AND NUMBER OF DAYS MINERS WORKED IN EACH COUNTY.

| Counties. | Number Pick Miners Employed. | Number Inside Day Hands Employed. | Number Outside Day Hands Employed. | Total Number Persons Engaged in Pick Mining. | Kegs Powder Used in Pick Mining. | Total Tons Coal Produced by Pick Miners. | Per Cent. of Pick Mined Coal as Compared With Total Output in County. | Average No. Days Worked by Each Pick Miner During Year. |
|------------------|------------------------------|-----------------------------------|------------------------------------|--|----------------------------------|--|---|---|
| Athens | 207 | 32 | 22 | 261 | 2,371 | 165,931 | 3.6 | 1 |
| Belmont | 348 | 47 | 36 | 431 | 1,049 | 225,665 | 3.8 | 1 |
| Carroll | 115 | 24 | 16 | 155 | 2,063 | 64,858 | 16.3 | 2 |
| Columbiana | 522 | 92 | 76 | 690 | 8,167 | 288,948 | 40.5 | 2 |
| Coshocton | 313 | 64 | 37 | 414 | 5,106 | 227,900 | 58.4 | 1 |
| Gallia | 36 | 6 | 6 | 48 | 265 | 9,920 | 100.0 | 1 |
| Guernsey | 60 | 4 | 4 | 68 | 374 | 27,150 | .9 | 1 |
| Harrison | 91 | 17 | 9 | 117 | 108 | 39,734 | 6.9 | 2 |
| Hocking | 289 | 28 | 27 | 344 | 2,737 | 209,537 | 20.2 | 1 |
| Holmes | 37 | 4 | 4 | 45 | 172 | 15,844 | 100.0 | 1 |
| Jackson | 1,210 | 400 | 205 | 1,815 | 26,138 | 588,764 | 71.5 | 1 |
| Jefferson | 469 | 69 | 44 | 582 | 634 | 355,096 | 8.8 | 1 |
| Lawrence | 397 | 50 | 37 | 484 | 5,141 | 179,766 | 83.7 | 1 |
| Mahoning | 167 | 20 | 23 | 210 | 1,930 | 63,974 | 100.0 | 1 |
| Medina | 43 | 7 | 9 | 59 | 442 | 12,465 | 100.0 | 1 |
| Meigs | 144 | 21 | 18 | 183 | 499 | 56,713 | 10.4 | 1 |
| Morgan | | | | | | | | |
| Muskingum | 357 | 49 | 34 | 440 | 9,018 | 232,459 | 55.9 | 1 |
| Noble | 75 | 3 | 5 | 83 | 270 | 25,478 | 6.7 | 1 |
| Perry | 231 | 49 | 32 | 312 | 3,648 | 185,526 | 8.9 | 1 |
| Portage | 159 | 43 | 38 | 240 | 4,025 | 83,524 | 81.4 | 1 |
| Scioto | 26 | 9 | 7 | 42 | 714 | 8,916 | 100.0 | 1 |
| Stark | 811 | 150 | 147 | 1,108 | 13,301 | 394,596 | 86.1 | 1 |
| Summit | 119 | 14 | 17 | 150 | 2,666 | 54,954 | 70.2 | 1 |
| Trumbull | 20 | 3 | 4 | 27 | 87 | 5,405 | 100.0 | 1 |
| Tuscarawas | 1,172 | 254 | 157 | 1,583 | 22,748 | 960,247 | 63.4 | 1 |
| Vinton | 175 | 16 | 11 | 202 | 1,990 | 49,250 | 38.2 | 1 |
| Washington | 1 | | | 1 | 44 | 1,232 | 100.0 | 1 |
| Wayne | 147 | 47 | 46 | 240 | 4,405 | 84,550 | 97.2 | 1 |
| Total | 7,741 | 1,522 | 1,071 | 10,334 | 120,112 | 4,608,402 | *16.6 | †182 |

Note:—

*Average number days worked by each pick miner during year was 182.

*Per cent. of pick coal as compared with total output for state is 16.6.

TABLE SHOWING THE TOTAL NUMBER OF MEN EMPLOYED IN PICK MINING DURING THE YEAR 1909.

| Counties. | Total Number Pick Miners Employed. | Total Number Day Hands Inside. | Total Number Day Hands Outside. | Total Number Employes in Pick Mines. |
|------------------|------------------------------------|--------------------------------|---------------------------------|--------------------------------------|
| Athens | 207 | 32 | 22 | 261 |
| Belmont | 348 | 47 | 36 | 431 |
| Carroll | 115 | 24 | 16 | 155 |
| Columbiana | 522 | 92 | 76 | 690 |
| Coshocton | 313 | 64 | 37 | 414 |
| Gallia | 36 | 6 | 6 | 48 |
| Guernsey | 60 | 4 | 4 | 68 |
| Harrison | 91 | 17 | 9 | 117 |
| Hocking | 289 | 28 | 27 | 344 |
| Holmes | 37 | 4 | 4 | 45 |
| Jackson | 1,210 | 400 | 205 | 1,815 |
| Jefferson | 469 | 69 | 44 | 582 |
| Lawrence | 397 | 50 | 37 | 484 |
| Mahoning | 167 | 20 | 23 | 210 |
| Medina | 43 | 7 | 9 | 59 |
| Meigs | 144 | 21 | 18 | 183 |
| Morgan ..... | ..... | ..... | ..... | ..... |
| Muskingum | 357 | 49 | 34 | 440 |
| Noble | 75 | 3 | 5 | 83 |
| Perry | 231 | 49 | 32 | 312 |
| Perry | 159 | 43 | 38 | 240 |
| Scioto | 26 | 9 | 7 | 42 |
| Stark | 811 | 150 | 147 | 1,108 |
| Summit | 119 | 14 | 17 | 150 |
| Trumbull | 20 | 3 | 4 | 27 |
| Tuscarawas | 1,172 | 254 | 157 | 1,583 |
| Vinton | 175 | 16 | 11 | 202 |
| Washington | 1 | ..... | ..... | 1 |
| Wayne | 147 | 47 | 46 | 240 |
| Total..... | 7,741 | 1,522 | 1,071 | 10,334 |

TABLE SHOWING THE TOTAL NUMBER OF MEN EMPLOYED IN MACHINE MINING DURING THE YEAR 1909.

| Counties. | Total Number Machine Runners Employed. | Total Number Drillers, Shooters and Loaders Employed. | Total Number Inside Day Hands Employed. | Total Number Outside Day Hands Employed. | Total Number Men Employed in Machine Mines. |
|--------------------|--|---|---|--|---|
| Adams | 496 | 4,813 | 1,238 | 749 | 7,296 |
| Almont | 712 | 5,472 | 1,268 | 624 | 8,076 |
| Atchison | 60 | 346 | 94 | 49 | 549 |
| Bombardier | 73 | 446 | 149 | 80 | 748 |
| Boston | 41 | 240 | 64 | 41 | 386 |
| Butte | 328 | 2,956 | 1,116 | 327 | 4,727 |
| Calaveras | 53 | 370 | 94 | 75 | 592 |
| Colusa | 122 | 1,112 | 244 | 198 | 1,676 |
| Contra Costa | 62 | 314 | 139 | 55 | 570 |
| Del Norte | 454 | 3,331 | 783 | 547 | 5,115 |
| Lawrence | 12 | 65 | 20 | 10 | 107 |
| Mahoning | | | | | |
| Medina | | | | | |
| Meigs | 76 | 471 | 128 | 86 | 761 |
| Morgan | 42 | 259 | 59 | 38 | 398 |
| Muskingum | 40 | 233 | 46 | 39 | 358 |
| Noble | 40 | 267 | 80 | 22 | 409 |
| Perry | 305 | 2,309 | 535 | 378 | 3,527 |
| Portage | 8 | 25 | 10 | 9 | 52 |
| Scioto | | | | | |
| Stark | 30 | 116 | | | 146 |
| Summit | 10 | 49 | 13 | 11 | 83 |
| Trumbull | | | | | |
| Tuscarawas | 170 | 483 | 144 | 107 | 904 |
| Vinton | 22 | 117 | 33 | 19 | 191 |
| Washington | | | | | |
| Wayne | 3 | 9 | 1 | 1 | 14 |
| Total | 3,159 | 23,803 | 6,258 | 3,465 | 36,685 |

TABLE SHOWING THE TOTAL NUMBER OF PICK MINERS AND SHOOTERS AND LOADERS, RUNNERS, INSIDE AND OUTSIDE DAY HANDS AND THE TOTAL NUMBER OF PERSONS EMPLOYED IN AND AROUND THE MINES; ALSO THE TONS PRODUCED FOR EACH PERSON EMPLOYED.

| Counties. | Total Number Pick Miners, Shooters and Loaders. | Total Number Inside Day Hands in Both Pick and Machine Mines. | Total Number Outside Day Hands in Both Pick and Machine Mines. | Total Number Machine Runners. | Total Number All Persons Engaged in Production of Coal. | Total Number Kegs of Powder Used in Each County. | Total Number Tons Coal Produced in Both Pick and Machine Mines. | No. Tons Produced for Each Person Employed in and Around the Mines, 1909. |
|------------------|---|---|--|-------------------------------|---|--|---|---|
| Athens | 5,020 | 1,270 | 771 | 496 | 7,557 | 27,321 | 4,354,074 | 576 |
| Belmont | 5,820 | 1,315 | 660 | 712 | 8,507 | 22,928 | 5,993,418 | 705 |
| Carroll | 461 | 118 | 65 | 60 | 704 | 4,144 | 398,085 | 565 |
| Columbiana | 968 | 241 | 156 | 73 | 1,438 | 11,228 | 714,325 | 497 |
| Coshocton | 553 | 128 | 78 | 41 | 800 | 6,495 | 390,302 | 488 |
| Gallia | 36 | 6 | 6 | ..... | 48 | 265 | 9,920 | 207 |
| Guernsey | 3,016 | 1,120 | 331 | 328 | 4,795 | 21,655 | 3,108,686 | 648 |
| Harrison | 461 | 111 | 84 | 53 | 709 | 3,647 | 576,162 | 813 |
| Hocking | 1,401 | 272 | 225 | 122 | 2,020 | 7,289 | 1,036,743 | 513 |
| Holmes | 37 | 4 | 4 | ..... | 45 | 172 | 15,844 | 352 |
| Jackson | 1,524 | 539 | 260 | 62 | 2,385 | 28,505 | 823,034 | 345 |
| Jefferson | 3,800 | 852 | 591 | 454 | 5,697 | 13,336 | 4,056,148 | 712 |
| Lawrence | 462 | 70 | 47 | 12 | 591 | 5,707 | 214,685 | 363 |
| Mahoning | 167 | 20 | 23 | ..... | 210 | 1,930 | 63,974 | 305 |
| Medina | 43 | 7 | 9 | ..... | 59 | 442 | 12,465 | 211 |
| Meigs | 615 | 149 | 104 | 76 | 944 | 3,550 | 543,595 | 576 |
| Morgan | 259 | 59 | 38 | 42 | 398 | 684 | 187,241 | 470 |
| Muskingum | 590 | 95 | 73 | 40 | 798 | 10,362 | 416,217 | 522 |
| Noble | 342 | 83 | 27 | 40 | 492 | 2,992 | 379,055 | 770 |
| Perry | 2,540 | 584 | 410 | 305 | 3,839 | 18,615 | 2,076,407 | 541 |
| Portage | 184 | 53 | 47 | 8 | 292 | 4,445 | 102,624 | 351 |
| Scioto | 26 | 9 | 7 | ..... | 42 | 714 | 8,916 | 212 |
| Stark | 927 | 150 | 147 | 30 | 1,254 | 14,338 | 458,392 | 366 |
| Summit | 168 | 27 | 28 | 10 | 233 | 3,139 | 78,268 | 336 |
| Trumbull | 20 | 3 | 4 | ..... | 27 | 87 | 5,405 | 200 |
| Tuscarawas | 1,655 | 398 | 264 | 170 | 2,487 | 27,193 | 1,513,900 | 609 |
| Vinton | 292 | 49 | 30 | 22 | 393 | 2,746 | 128,928 | 328 |
| Washington | 1 | ..... | ..... | ..... | 1 | 44 | 1,232 | 1,232 |
| Wayne | 156 | 48 | 47 | 3 | 254 | 4,453 | 86,987 | 342 |
| Total | 31,544 | 7,780 | 4,536 | 3,159 | 47,019 | 248,426 | 27,755,032 | *590 |

*Average.

Note:—

Average number tons produced by each person engaged in production of coal was 590.

TABLE SHOWING THE NUMBER OF PERSONS ENGAGED IN THE PRODUCTION OF COAL IN THE SEVERAL COUNTIES DURING THE YEAR 1909, AS COMPARED WITH 1908, AND GAINS AND LOSSES IN EACH COUNTY.

| Counties. | Number Pick Miners, Shooters and Loaders Employed in 1908. | Number Pick Miners, Shooters and Loaders Employed in 1909. | Machine Runners 1908. | Machine Runners 1909. | Inside Day Hands 1908. | Inside Day Hands 1909. | Outside Day Hands 1908. | Outside Day Hands 1909. | Total Number Employees 1908. | Total Number Employees 1909. | Gain. | Loss. |
|-----------------|--|--|-----------------------|-----------------------|------------------------|------------------------|-------------------------|-------------------------|------------------------------|------------------------------|-------|-------|
| Athens..... | 5,651 | 5,020 | 494 | 496 | 1,382 | 1,270 | 862 | 771 | 8,389 | 7,557 | ..... | 832 |
| Belmont..... | 5,738 | 5,820 | 734 | 712 | 1,350 | 1,315 | 671 | 660 | 8,502 | 8,507 | 5 | ..... |
| Carroll..... | 479 | 461 | 56 | 60 | 90 | 118 | 65 | 65 | 690 | 704 | 14 | ..... |
| Columbiana..... | 890 | 968 | 64 | 73 | 221 | 241 | 196 | 156 | 1,311 | 1,438 | 127 | ..... |
| Coahocton..... | 433 | 553 | 28 | 41 | 107 | 128 | 65 | 78 | 653 | 800 | 167 | ..... |
| Gallia..... | 82 | 36 | ..... | ..... | 13 | 6 | 9 | 6 | 104 | 48 | ..... | 56 |
| Guernsey..... | 3,148 | 3,016 | 316 | 328 | 1,103 | 1,120 | 356 | 331 | 4,923 | 4,795 | ..... | 128 |
| Harrison..... | 467 | 461 | 52 | 53 | 94 | 111 | 54 | 84 | 697 | 709 | 42 | ..... |
| Hocking..... | 1,631 | 1,401 | 130 | 122 | 326 | 272 | 265 | 225 | 2,352 | 2,020 | ..... | 332 |
| Holmes..... | 50 | 37 | ..... | ..... | 2 | 4 | 3 | 4 | 55 | 45 | ..... | 10 |
| Jackson..... | 1,640 | 1,524 | 66 | 62 | 611 | 539 | 288 | 260 | 2,605 | 2,385 | ..... | 220 |
| Jefferson..... | 4,225 | 3,800 | 481 | 454 | 941 | 852 | 675 | 591 | 6,322 | 5,697 | ..... | 625 |
| Lawrence..... | 420 | 462 | 12 | 12 | 83 | 70 | 57 | 47 | 652 | 591 | 39 | ..... |
| Mahoning..... | 160 | 167 | 2 | ..... | 32 | 20 | 26 | 23 | 220 | 210 | ..... | 10 |
| Medina..... | 38 | 43 | ..... | ..... | 8 | 7 | 9 | 9 | 55 | 50 | 4 | ..... |
| Meigs..... | 766 | 615 | 64 | 76 | 187 | 149 | 131 | 104 | 1,148 | 944 | ..... | 204 |
| Morgan..... | 283 | 259 | 43 | 42 | 65 | 59 | 42 | 38 | 433 | 398 | ..... | 35 |
| Muskingum..... | 668 | 590 | 43 | 40 | 99 | 95 | 73 | 73 | 883 | 798 | ..... | 85 |
| Noble..... | 278 | 342 | 31 | 40 | 122 | 83 | 32 | 27 | 461 | 492 | 31 | ..... |
| Perry..... | 2,801 | 2,540 | 320 | 305 | 636 | 584 | 456 | 410 | 4,213 | 3,839 | ..... | 374 |
| Portage..... | 180 | 184 | 12 | 8 | 74 | 53 | 45 | 47 | 311 | 292 | ..... | 19 |
| Scioto..... | 28 | 26 | ..... | ..... | 9 | 9 | 8 | ..... | 45 | 42 | ..... | 3 |
| Stark..... | 1,108 | 927 | 24 | 30 | 199 | 150 | 182 | 147 | 513 | 1,254 | 741 | ..... |
| Summit..... | 173 | 168 | 10 | 10 | 26 | 27 | 45 | 28 | 254 | 233 | ..... | 21 |
| Trumbull..... | 21 | 20 | ..... | ..... | 1 | 3 | 2 | 4 | 24 | 27 | 3 | ..... |
| Tuscarawas..... | 1,814 | 1,655 | 133 | 170 | 382 | 398 | 244 | 264 | 2,573 | 2,487 | ..... | 86 |
| Vinton..... | 353 | 292 | 50 | 22 | 85 | 49 | 55 | 30 | 543 | 393 | ..... | 150 |
| Washington..... | 16 | 1 | ..... | ..... | 6 | ..... | 3 | ..... | 25 | 1 | ..... | 24 |
| Wayne..... | 340 | 156 | 2 | 3 | 72 | 48 | 47 | 47 | 1,461 | 254 | ..... | 1,207 |
| Total..... | 33,879 | 31,544 | 3,107 | 3,159 | 8,315 | 7,780 | 4,906 | 4,530 | 50,267 | 47,019 | 1,173 | 4,421 |

Note:

Loss in 1909 as compared with 1908 3,248 men.

| | | | | | | | | | | | |
|------------------|------|--------|--------|-------|-------|--------|--------|-------|---------|-------------|--------|
| Muskingum | 189 | 83 | 2,801 | 15 | 154 | 85 | 2,162 | 14 | 168 | 416,217 | 2,477 |
| Noble | 148 | 8 | 3,185 | 22 | 170 | 102 | 3,468 | 20 | 110 | 379,055 | 3,446 |
| Perry | 174 | 81 | 2,290 | 13 | 172 | 913 | 2,071 | 12 | 994 | 2,076,407 | 2,089 |
| Portage | 208 | 81 | 1,031 | 5 | 122 | 19 | 1,005 | 8 | 100 | 102,624 | 1,026 |
| Scioto | 125 | 16 | 557 | 4 | ..... | ..... | ..... | ..... | 16 | 8,916 | 557 |
| Stark | 193 | 297 | 1,329 | 7 | 168 | ..... | ..... | ..... | 297 | 458,392 | 1,543 |
| Summit | 132 | 31 | 1,773 | 13 | 121 | 24 | 971 | 8 | 55 | 78,288 | 1,423 |
| Trumbull | 135 | 7 | 772 | 6 | ..... | ..... | ..... | ..... | 7 | 5,405 | 772 |
| Tuscarawas | 215 | 411 | 2,336 | 11 | 195 | 251 | 2,205 | 11 | 682 | 1,513,900 | 2,287 |
| Vinton | 98 | 27 | 1,824 | 19 | 161 | 52 | 1,532 | 10 | 79 | 128,928 | 1,632 |
| Washington | 260 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1,232 | ..... |
| Wayne | 145 | 93 | 909 | 6 | 102 | 2 | 1,219 | 12 | 95 | 86,987 | 916 |
| Total | *182 | †2,593 | *1,777 | *10 | *172 | †9,723 | *2,381 | *14 | †12,316 | †27,755,032 | *2,254 |

†Total

*Average for the state.

NOTE:

Average tons produced for each day hand for the year in Pick Mines..... 1,777
 Average tons produced for each day hand per day in Pick Mines..... 10
 Average tons produced for each day hand for the year in Machine Mines..... 2,381
 Average tons produced for each day hand in Machine Mines..... 14
 Average tons produced for each day hand in the state for the year..... 2,254
 Average tons produced for each day hand in the state per day..... 13

MINING MACHINERY

TABLE SHOWING THE NUMBER AND MAKE OF MINING MACHINES IN USE IN THE STATE, AND POWDER BY WHICH THEY ARE OPERATED.

| Counties. | Electric. | | | | | | Total Electric. | Compressed Air. | | | | Total Compressed Air. | Grand Total. |
|------------------|-----------|----------------|----------|-------------------|-----------|-----------|-----------------|-----------------|-----------|------------|----------|-----------------------|--------------|
| | Jeffrey. | Morgan-Gardner | Goodman. | General Electric. | Harrison. | Sullivan. | | Jeffrey. | Harrison. | Ingersoll. | Goodman. | | |
| Athens | 34 | 90 | 45 | | | | 169 | | | | | | 169 |
| Belmont | 133 | 83 | 55 | | | | 271 | 12 | | | | 12 | 283 |
| Carroll | 24 | 8 | 1 | | | | 33 | | | | | | 33 |
| Columbiana | 9 | 23 | 3 | | | | 35 | | | | | | 35 |
| Coshocton | 18 | | | | | | 18 | | | 7 | | 7 | 25 |
| Guernsey | 39 | 73 | 8 | | 1 | 4 | 125 | 2 | | | | 2 | 127 |
| Harrison | 14 | 10 | | | | | 24 | | | | | | 24 |
| Hocking | 25 | 21 | | | | | 46 | 1 | | | | 1 | 47 |
| Jackson | 31 | 5 | 5 | | | | 41 | | | | | | 41 |
| Jefferson | 128 | 11 | 95 | | | 4 | 238 | | | | | | 238 |
| Lawrence | 6 | | | | | | 6 | | | | | | 6 |
| Meigs | 5 | 28 | 4 | | | 1 | 38 | | | | | | 38 |
| Morgan | 10 | 4 | | | | | 14 | | | | | | 14 |
| Muskingum | 9 | 11 | | | | | 20 | | | | | | 20 |
| Noble | 7 | 5 | 1 | | | | 13 | | | | | | 13 |
| Perry | 76 | 46 | 4 | | | | 126 | | | | | | 126 |
| Portage | | | | 5 | | | 5 | | | 7 | | 7 | 12 |
| Stark | | | 10 | | | | 10 | 11 | | 9 | | 20 | 30 |
| Summit | | | | | | | | | | | 3 | 3 | 3 |
| Tuscarawas | 2 | 24 | | | | | 26 | 47 | 29 | | | 76 | 102 |
| Vinton | 6 | 1 | | | | | 7 | | | | | | 7 |
| Wayne | | | 2 | | | | 2 | | | | | | 2 |
| Total..... | 576 | 443 | 233 | 5 | 1 | 9 | 1,267 | 14 | 59 | 52 | 3 | 128 | 1,395 |

Note:—

Total machines of all kinds in use in 1908..... 1,445

Total machines of all kinds in use in 1909..... 1,395

Showing net loss of..... 50

TABLE SHOWING THE NUMBER AND MAKE OF HAULAGE MOTORS IN USE IN THE VARIOUS COUNTIES OF THE STATE IN 1909.

| Counties. | Jeffrey. | Morgan-Gardner. | Goodman. | Link-Belt. | General Electric. | Westinghouse. | Baldwin-Westinghouse. | Total Motors. |
|------------------|----------|-----------------|----------|------------|-------------------|---------------|-----------------------|---------------|
| Athens | 9 | 19 | 27 | ..... | 1 | 2 | ..... | 58 |
| Belmont | 29 | 32 | 20 | ..... | ..... | 20 | 1 | 102 |
| Carroll | 5 | 2 | 1 | ..... | ..... | ..... | ..... | 8 |
| Columbiana ..... | ..... | 8 | 1 | ..... | ..... | 1 | ..... | 10 |
| Coshocton | 5 | ..... | ..... | ..... | ..... | ..... | ..... | 5 |
| Guernsey | 18 | 14 | 13 | ..... | ..... | 1 | ..... | 46 |
| Harrison | 4 | 3 | ..... | ..... | ..... | 1 | ..... | 8 |
| Hocking | 5 | 3 | 3 | ..... | ..... | ..... | ..... | 11 |
| Jackson | 3 | 2 | ..... | ..... | ..... | ..... | ..... | 5 |
| Jefferson | 21 | 10 | 21 | 1 | 1 | 8 | 9 | 71 |
| Lawrence | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Meigs ..... | ..... | 7 | ..... | ..... | ..... | ..... | ..... | 7 |
| Morgan | 2 | 1 | ..... | ..... | ..... | ..... | ..... | 3 |
| Muskingum ..... | ..... | 4 | ..... | ..... | ..... | ..... | ..... | 4 |
| Noble | 2 | 2 | ..... | ..... | ..... | ..... | ..... | 4 |
| Perry | 26 | 12 | 1 | ..... | ..... | ..... | ..... | 39 |
| Tuscarawas | 12 | 7 | 2 | ..... | 1 | ..... | ..... | 22 |
| Vinton ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | 1 |
| Total..... | 142 | 127 | 89 | 1 | 3 | 33 | 10 | 405 |

Note:—

Total number motors in use in 1909..... 405

Total number motors in use in 1908..... 383

Gain over 1908..... 22

MINES AND MODE OF VENTILATION

TABLE SHOWING NUMBER OF MINES OPENED, SUSPENDED AND ABANDONED DURING THE YEAR 1909, AS REPORTED BY THE DISTRICT MINE INSPECTORS.

| Counties. | New Mines. | Suspended. | Abandoned. |
|------------------|------------|------------|------------|
| Athens | | 7 | 1 |
| Belmont | | | 1 |
| Carroll | 1 | 3 | 2 |
| Columbiana | 1 | | 3 |
| Coshocton | 3 | 1 | 2 |
| Guernsey | | 5 | 3 |
| Harrison | 1 | | |
| Hocking | 5 | 3 | |
| Holmes | | | 1 |
| Jackson | 3 | 10 | 8 |
| Jefferson | 2 | 8 | |
| Lawrence | 1 | | 2 |
| Mahoning | 4 | 1 | 2 |
| Medina | 2 | | 1 |
| Meigs | 1 | | |
| Muskingum | | 3 | |
| Ottawa | 1 | 1 | |
| Perry | | 3 | 1 |
| Portage | 1 | | |
| Stark | 2 | 6 | 4 |
| Summit | | 1 | 1 |
| Tuscarawas | 4 | 2 | 1 |
| Vinton | 2 | 3 | 1 |
| Wayne | 4 | 2 | |
| Total..... | 38 | 59 | 34 |

ELECTRIC MINING MACHINERY

Electric Locomotives.



TWO JEFFREY LOCOMOTIVES AT MINES OF COLUMBUS & HOCKING
COAL AND IRON CO.

Mine operators have awakened to the fact that "continuous operation" means keeping down the cost per ton in handling, naturally increasing the profits.

At the outset, Jeffrey Locomotives were supplied to replace mule haulage—today they are selected as an actual necessity to maintain the desired tonnage:

Jeffrey Electric Locomotives are built especially strong to withstand the severe requirements in mine haulage. You need only apply the power and they run. Every detail is considered and selected after a thorough testing and careful inspection and the latest models represent the most practical mine locomotives on the market.

Illustrated books, "Care of Electric Mine Locomotives in Service," No. 12, and the Jeffrey Catalogue No. 17, may be secured if you will request them.

Electric Locomotives



Jeffrey Crab Locomotive. Front view. Capacity $7\frac{1}{2}$ tons. The underground photograph was taken in the mines of The Jenner-Quemahoning Coal Co.



Jeffrey Gathering Locomotive. Photograph of a 6-ton Cable Reel Gathering Locomotive with inside wheels in the coal mine of the Pittsburg Gas Coal Co.

Electric Coal Cutters



Jeffrey No. 28.—A Short Wall Coal Cutter. Easily controlled by the operator, provided with steel feed cable wound on a power driven drum on the front of the machine, pulling it across the face of the coal at a speed which is regulated according to the hardness of the coal.



Jeffrey 19.—A heavy service Electric Coal Cutter in a mine of the New Pittsburg Coal Co., built strong to withstand hard mine service; all parts interchangeable.

Jeffrey Coal Cutter and Drill



Jeffrey 16 D Air Power Coal Cutter in operation in mines of Massillon Co



Jeffrey A-5 Electric Rotary Drill in operation in the Sugar Creek Mine. type of drill is easily handled and more readily set in position than any Electric Rotary Drill in use.

Jeffrey Coal Tipple and Screens



In the construction of a modern Coal Tipple, probably no one concern has given the subject as much thought and attention as has The Jeffrey Manufacturing Company, Columbus, O.

The above photograph illustrates The Empire Coal & Coke Co.'s Steel Coal Tipple built for 500 tons capacity per day, and represents probably the most modern Coal Tipple in the world. The coal is handled entirely by mechanical appliances consisting of continuous elevators.

A complete system of screening is also installed including revolving, shaking and bar screens; also picking tables and mixing conveyors. This method has not only enabled the operators to materially reduce their operating expense, but has enabled the mine owner to secure a higher price for his product.

The Jeffrey Manufacturing Company is prepared to design and build Coal Tipples, including construction of the buildings and complete apparatus, and guarantee to mine owners a definite saving in operating expense.

Other Jeffrey products consist of Chutes, Weigh Baskets, Crushers, Cross Over Dumps, Drop Rail Cages, Elevating and Conveying Machinery to handle materials of all kinds.

Jeffrey catalogues on mine tipples will be mailed if requested.

Mine Ventilation



Jeffrey Centrifugal Fans are especially designed and built for the very heavy duty required for mine ventilation. The above photographic reproduction shows a 14-foot single inlet blowing fan installed for the New Pittsburgh Coal Co. at Murray City, Ohio, and represents a typical fan installation at a drift mine.

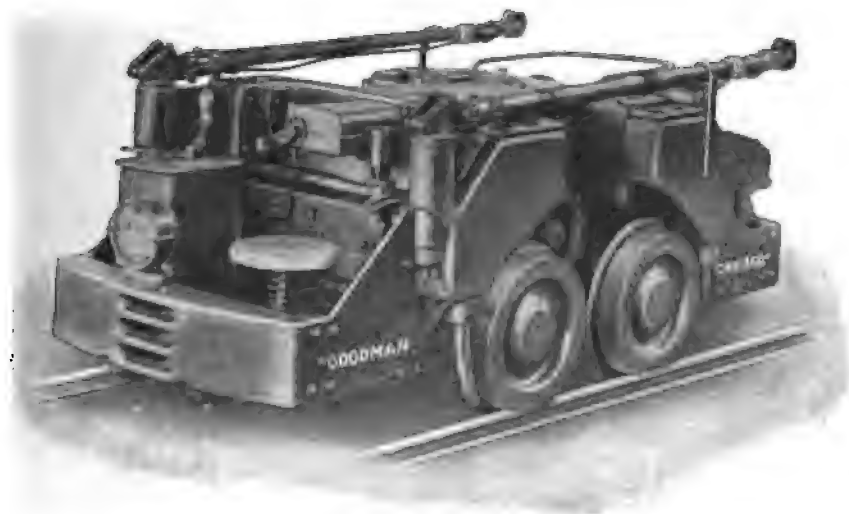
This fan has a capacity of 160,000 cubic feet of air per minute delivered against a mine resistance of 3 in. water gauge at 150 R. P. M. As the result of a recent test, this fan developed a mechanical efficiency of 80 per cent., and manometric efficiency of 66 per cent. It will be noted from the photograph that the fan has a complete steel casing extending down to the ground line which eliminates the vast amount of masonry work usually required for a mine fan; at the same time enabling the fan to be installed in the least amount of time without the expense of any elaborate foundation. The total cost for the entire above equipment including the foundation and a concrete block engine house cost less than \$400.00, and as all parts of the casing were flanged together, no field riveting was necessary for the fan construction. During the past year Jeffrey fans were installed at over a score of the large coal mines in the State of Ohio and in every instance they are exceeding their guaranteed capacity and meeting the approval of the operators. This is due to the fact that they are capable of producing large volumes at comparatively low speeds and every fan installation is especially designed to meet the local conditions existing in the particular situation.

Jeffrey catalogues on mine ventilation are worth securing. Sent only on request.

Goodman Gathering Locomotives

Improvement in gathering locomotives is the most notable feature of recent progress in mining equipment. The Goodman line of gatherers has been increased by the addition of new types during the past year, and improved by the incorporation of new ideas in design and new details of construction.

The illustration shows a late design of what has become well known as the Goodman "Type 1600" gatherer, a small locomotive built to handle the smallest cars, and operate with perfect ease over the sharp curves found in mines where mules have been used in room work. It has a short wheel base, with



flexible truck, and will follow the crudest track on which the cars themselves will run. It has a single-motor drive for both axles, and is otherwise extremely compact in construction. The sand boxes are large and are placed high, giving ample capacity and good "head." The frame is of steel; plate sides and cast ends.

This "electric mule" is furnished with any type of Goodman cable reel—automatic, separately motor driven, or mechanically driven from the main motor. Other features—number and position of trolley poles, current control devices, etc.—are varied to suit conditions.

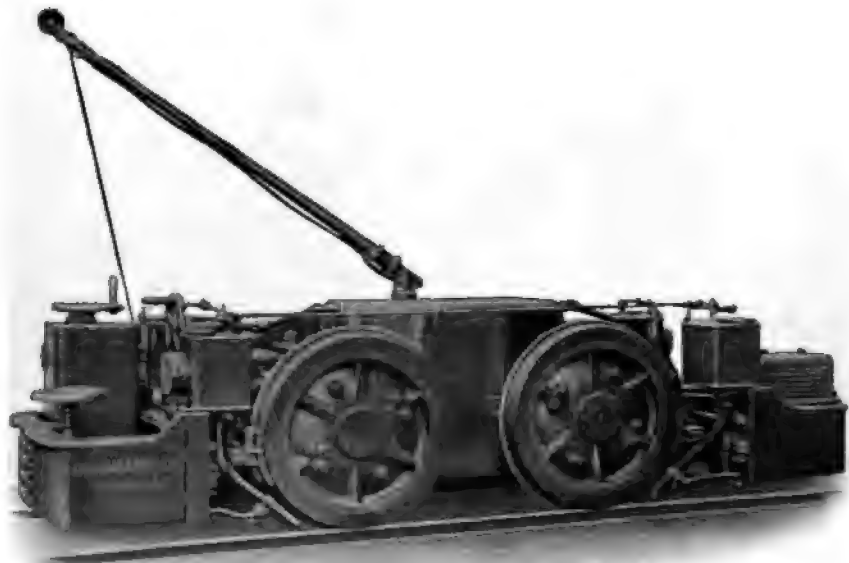
The brake is of the band type, applied to an intermediate-speed shaft and is very powerful, without acting directly on armature or axle. Every movement is quick and under close control, making the locomotive very rapid and easily handled in its regular working, where operative speed and instant response mean so much in cars handled per day.

Other Goodman gatherers cover the entire field, from this little fellow to the largest sizes on which steel haulage cables or electric cable reels can be found useful. A 40-page bulletin, No. 502-0, shows up the full line, and may be had by addressing the Goodman Manufacturing Co., Chicago.

Goodman Single Motor Locomotive

Recent changes in details of construction have made the well known **Single Motor Locomotive** of the Goodman Manufacturing Co. better than ever. There is no alteration of the essentials of flexible wheel base and unit drive, which give this type of locomotive a maximum of pulling power at all times and enable it to outhaul a locomotive of any other type, ton for ton of weight.

The frame is of composite construction, the central body being a single casting which serves as a rigid housing for all the working parts. The cab



or bumpers are of annealed cast steel, detachable. This construction affords a maximum of durability, the cabs being practically unbreakable and readily replaced in case of damage by some especially serious accident.

Aside from replacement of cabs in case of fracture, the detachable feature is of advantage to the maker and to the user in the interchangeability which it permits for fitting just such cabs and equipment as will best suit the conditions of service, at time of purchase or in the future. Thus a locomotive originally equipped for single-end control may later be rearranged without difficulty for double-end control; a plain haulage locomotive may at any time have its front bumper removed and a cab attached suitable for carrying an electric cable reel so that the locomotive may do gathering work, etc.

Symmetrical in design and built entirely within the track wheels, the Goodman Single-Motor Locomotive is compact, perfectly balanced, of utmost stability and may be operated in the narrowest of entries. Often it is the only type which can be installed without widening the entries, when locomotive haulage is established in an old mine where track gauges are of narrow medium width.

Complete information regarding this Single-Motor Locomotive, made exclusively by the Goodman Manufacturing Co., is given in Bulletin No. 401-0, which may be had on request.

INSPECTOR OF MINES

DETAILED LIST OF MINES OPENED UP, SUSPENDED AND ABANDONED DURING THE YEAR 1909.

ATHENS COUNTY.

| New Mines. | Suspended. | Abandoned. |
|------------|---|-----------------------|
| | Sedalia No. 14. Sunday Creek No. 210. Sunday Creek No. 252. Sunday Creek No. 275. Sunday Creek No. 281. Sunday Creek No. 311. Sunday Creek No. 312. | Sunday Creek No. 205. |

BELMONT COUNTY.

| | | |
|--|--|----------|
| | | Pelkeys. |
|--|--|----------|

CARROLL COUNTY.

| | | |
|------------|---|-----------------------------|
| Leesville. | Horse Shoe. National No. 5. Russell Hill. | Dorothy. Kirks Big Vein. |
|------------|---|-----------------------------|

COLUMBIANA COUNTY.

| | | |
|-------------|--|---|
| West Point. | | Fairfield No. 2. West Pittsburg. New Slope. |
|-------------|--|---|

COSHOCTON COUNTY.

| | | |
|---|--------------|-------------------------|
| Franklin No. 3. Locust Grove. Powers. | Drake No. 2. | Nichols. Wade No. 3. |
|---|--------------|-------------------------|

GUERNSEY COUNTY.

| | | |
|--|---|----------------------------------|
| | Indian Camp. Old Orchard. Ohio No. 1. Leatherwood No. 2. Union No. 1. | Eureka. Norris. White Ash. |
|--|---|----------------------------------|

HARRISON COUNTY.

| New Mines. | Suspended. | Abandoned. |
|------------|------------|------------|
| Adena. | | |

HOCKING COUNTY.

| | | |
|--|--|--|
| Diamond Clay. Edgell. Green. Hocking. New Pittsburg No. 3. | Lost Run. New Pittsburg No. 1. New Pittsburg No. 1½. | |
|--|--|--|

HOLMES COUNTY.

| | | |
|--|--|-------------------|
| | | Bilderback No. 1. |
|--|--|-------------------|

JACKSON COUNTY.

| | | |
|--|--|---|
| Turner. Mohawk. Wellston Colliery. | Armstrong Slope. Cameron. Emma No. 4. Gem City. Kessler. Superior No. 10. Superior No. 11. Victor Royal No. 2. Washington. Woodrow No. 1. | See Kay. Comet. D. C. & I. No. 1. O. P. Cement. Peerless. Superior No. 8. Standard. Steinmetz. |
|--|--|---|

JEFFERSON COUNTY.

| | | |
|---------------------------|---|--|
| Dando Clay. H. Niesen. | Calumet. Dorothy. Freemans. Jefferson No. 4. Kelleys. Rush Run No. 3. Calumet Clay. Freemans Clay. | |
|---------------------------|---|--|

LAWRENCE COUNTY.

| | | |
|-------------------|--|-------------------|
| Ryan New Opening. | | Ryan. Belfont. |
|-------------------|--|-------------------|

MAHONING COUNTY.

| New Mines. | Suspended. | Abandoned. |
|---------------------------------------|------------|------------------------|
| Beaver. Fisk. Paulin. Spait. | McKinley. | North Lima. Y. & O. |

MEDINA COUNTY.

| | | |
|-------------------------|--|--------------|
| Pleasant Vein. Star. | | James No. 4. |
|-------------------------|--|--------------|

MEIGS COUNTY.

| | | |
|------------------|--|--|
| Ohio River Coal. | | |
|------------------|--|--|

MUSKINGUM COUNTY.

| | | |
|--|--------------------------------------|--|
| | 37—Nos. 1 and 2. Dewey. Kings. | |
|--|--------------------------------------|--|

OTTAWA COUNTY—(Gypsum.)

| | | |
|--------------|-----------------|--|
| Wests No. 3. | Consumer No. 2. | |
|--------------|-----------------|--|

PERRY COUNTY.

| | | |
|--|---|------------------|
| | Beech Grove. Lyonsdale. S. C. No. 321—Pedlow. | Pine Run No. 44. |
|--|---|------------------|

PORTAGE COUNTY.

| | | |
|----------------|--|--|
| Black Diamond. | | |
|----------------|--|--|

ANNUAL REPORT

STARK COUNTY.

| New Mines. | Suspended. | Abandoned. |
|------------------------------------|--|--|
| Blank & Bliler. Massillon City. | Crescent. C. H. B. Fox Run. Indian Run. N. F. P. No. 2. Robertsville. | Buckeye. Hickory. No. 18. No. 19. |

SUMMIT COUNTY.

| | | |
|--|------------------|-----------|
| | Swinehart No. 1. | Hametown. |
|--|------------------|-----------|

TUSCARAWAS COUNTY.

| | | |
|---|---|-------------------|
| Horn. Laughlins. Novelty No. 2. New National Clay. | East Goshen No. 1. Reeves No. 1 or Mullins No. 3. | Brock Hill No. 3. |
|---|---|-------------------|

VINTON COUNTY.

| | | |
|--|---|------------|
| Lawler, Jno. L. Puritan Brick & Cement. | Fobes Tompkins. Raccoon Valley Nos. 1, 2 and 3. Valley Coal. | Outhwaite. |
|--|---|------------|

WAYNE COUNTY.

| | | |
|--|--------------------------------|--|
| Elm Run No. 9. Jones No. 3. No. 22. No. 23. | Chippewa. Doylestown No. 1. | |
|--|--------------------------------|--|

TABLE SHOWING THE NUMBER OF LARGE MINES EMPLOYING TEN OR MORE MEN, AND THE NUMBER OF SMALL MINES WITH LESS THAN TEN MEN, IN OPERATION DURING THE YEAR 1909; ALSO NUMBER OF LARGE MINES IDLE DURING THE YEAR.

| Counties. | Large Mines, Ten or More Men, in Operation. | Large Mines Idle in 1909. | Total Number of Large Mines. | Small Mines, Less Than Ten Men, in Operation. | Total Mines in Operation. |
|------------------|---|---------------------------|------------------------------|---|---------------------------|
| Athens | 46 | 2 | 48 | 18 | 64 |
| Belmont | 50 | 2 | 52 | 48 | 98 |
| Carroll | 12 | 1 | 13 | 16 | 28 |
| Columbiana | 18 | ..... | 18 | 27 | 45 |
| Coshocton | 14 | ..... | 14 | 20 | 34 |
| Gallia | 1 | 1 | 2 | 9 | 10 |
| Guernsey | 29 | 2 | 31 | 19 | 48 |
| Harrison | 6 | ..... | 6 | 35 | 41 |
| Hocking | 17 | 1 | 18 | 9 | 26 |
| Holmes ..... | ..... | ..... | ..... | 12 | 12 |
| Jackson | 42 | 7 | 49 | 43 | 85 |
| Jefferson | 39 | 3 | 42 | 30 | 69 |
| Lawrence | 14 | 1 | 15 | 33 | 47 |
| Mahoning | 4 | 1 | 5 | 18 | 22 |
| Medina | 1 | ..... | 1 | 7 | 8 |
| Meigs | 12 | 2 | 14 | 26 | 38 |
| Morgan | 2 | ..... | 2 | 1 | 3 |
| Muskingum | 14 | 2 | 16 | 46 | 60 |
| Noble | 5 | ..... | 5 | 31 | 36 |
| Perry | 32 | 3 | 35 | 33 | 65 |
| Portage | 3 | ..... | 3 | 3 | 6 |
| Scioto | 1 | ..... | 1 | 3 | 4 |
| Stark | 14 | 3 | 17 | 44 | 58 |
| Summit | 2 | ..... | 2 | 6 | 8 |
| Trumbull ..... | ..... | ..... | ..... | 9 | 9 |
| Tuscarawas | 34 | 4 | 38 | 51 | 85 |
| Vinton | 8 | ..... | 8 | 6 | 14 |
| Washington ..... | ..... | ..... | ..... | 1 | 1 |
| Wayne | 4 | 1 | 5 | 6 | 10 |
| Total..... | 424 | 36 | 460 | 610 | 1,034 |

TABLE SHOWING THE NUMBER OF MINES USING THE VARIOUS
ODS OF VENTILATION, AND THE THREE KINDS OF OPENING

| Counties. | Drift. | Slope. | Shaft. | Total. | Fan. | Furnace. | Fire Basket. | Ex. Steam. | Natural. | Total. |
|------------------|--------|--------|--------|--------|------|----------|--------------|------------|----------|--------|
| Athens | 38 | 8 | 21 | 67 | 44 | 5 | | | 18 | 25 |
| Belmont | 75 | 15 | 7 | 97 | 49 | 22 | 1 | | 7 | 78 |
| Carroll | 24 | 1 | 2 | 27 | 7 | 10 | 3 | | 18 | 15 |
| Columbiana | 25 | 12 | 8 | 45 | 16 | 10 | | 2 | 15 | 7 |
| Coshocton | 33 | | | 33 | 5 | 12 | 1 | | 19 | 33 |
| Gallia | 9 | 1 | | 10 | | 2 | 1 | | 8 | 9 |
| Guernsey | 19 | 13 | 17 | 49 | 26 | 3 | 1 | 1 | 23 | 22 |
| Harrison | 33 | 6 | 1 | 40 | 4 | 1 | 2 | | 28 | 1 |
| Hocking | 26 | | | 26 | 9 | 4 | 5 | | 11 | 20 |
| Holmes | 10 | 1 | 1 | 12 | | 2 | | 1 | 35 | 29 |
| Jackson | 63 | 8 | 15 | 86 | 24 | 29 | 10 | | 28 | 1 |
| Jefferson | 56 | 5 | 8 | 69 | 31 | 15 | 1 | | 20 | 2 |
| Lawrence | 47 | | | 47 | 1 | 17 | 1 | | 23 | 5 |
| Mahoning | 4 | 13 | 4 | 21 | 3 | 4 | 1 | 2 | 29 | 5 |
| Medina | | 5 | 2 | 7 | | 2 | | 4 | 28 | 2 |
| Melgs | 33 | 2 | 2 | 37 | 8 | 9 | | | 23 | 5 |
| Morgan | 2 | 1 | | 3 | 2 | 1 | | | 29 | 2 |
| Muskingum | 45 | 14 | | 59 | 5 | 13 | 6 | | 28 | 2 |
| Noble | 31 | 2 | 3 | 36 | 4 | 2 | 1 | | 29 | 5 |
| Perry | 50 | 8 | 6 | 64 | 27 | 9 | | | 28 | 2 |
| Portage | 1 | | 5 | 6 | 3 | | | 3 | 23 | 5 |
| Scioto | 4 | | | 4 | | 2 | | | 29 | 2 |
| Stark | 28 | 16 | 15 | 59 | 10 | 19 | 3 | 4 | 28 | 2 |
| Summit | 1 | 5 | 2 | 8 | 2 | | 1 | | 29 | 5 |
| Trumbull | 2 | 2 | 5 | 9 | | | | | 28 | 2 |
| Tuscarawas | 70 | 12 | 3 | 85 | 16 | 41 | 3 | | 29 | 5 |
| Vinton | 12 | 2 | 1 | 15 | 5 | 5 | | | 28 | 2 |
| Washington | | 1 | | 1 | | 1 | | | 29 | 5 |
| Wayne | 3 | 5 | 2 | 10 | 3 | | 1 | 2 | 28 | 2 |
| Total..... | 744 | 158 | 130 | 1,032 | 302 | 240 | 42 | 19 | 429 | |

| Year. | 1892 | 1893 | 1894 | 1895 | 1896 | 1897 | 1898 | 1899 | 1900 | 1901 | 1902 | 1903 | 1904 | 1905 | 1906 | 1907 | 1908 | 1909 |
|---|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|-------|
| Drifts | 303 | 676 | 657 | 749 | 821 | 800 | 921 | 789 | 696 | 625 | 589 | 591 | 638 | 626 | 696 | 691 | 742 | 744 |
| Shafts | 91 | 121 | 149 | 150 | 149 | 153 | 143 | 145 | 122 | 133 | 140 | 142 | 153 | 130 | 163 | 140 | 140 | 130 |
| Slopes | 40 | 61 | 61 | 68 | 66 | 85 | 145 | 133 | 140 | 149 | 142 | 140 | 142 | 125 | 144 | 149 | 171 | 158 |
| Small mines, kind of opening un- known | 458 | 151 | 296 | 220 | 167 | 190 | 46 | 65 | 114 | 99 | 96 | 81 | 85 | ..... | ..... | ..... | ..... | ..... |
| Total | 892 | 1,009 | 1,163 | 1,187 | 1,203 | 1,228 | 1,255 | 1,132 | 1,072 | 1,006 | 967 | 954 | 1,018 | 881 | 1,003 | 980 | 1,053 | 1,032 |
| Fans | 127 | 141 | 139 | 134 | 134 | 149 | 149 | 147 | 171 | 182 | 219 | 259 | 282 | 289 | 299 | 322 | 314 | 302 |
| Furnaces | 253 | 323 | 264 | 278 | 281 | 280 | 317 | 274 | 264 | 253 | 222 | 244 | 254 | 239 | 252 | 235 | 236 | 240 |
| Fire baskets | 11 | 23 | 32 | 36 | 38 | 51 | 45 | 41 | 48 | 40 | 57 | 44 | 50 | 36 | 38 | 37 | 46 | 42 |
| Steam jets and exhaust from pumps | 30 | 39 | 43 | 48 | 52 | 49 | 47 | 34 | 33 | 44 | 45 | 32 | 34 | 13 | 13 | 19 | 14 | 19 |
| Natural | 205 | 316 | 378 | 452 | 528 | 516 | 636 | 523 | 453 | 389 | 336 | 302 | 320 | 304 | 401 | 367 | 443 | 429 |
| Small mines, mode of ventilation unknown | 266 | 167 | 309 | 242 | 179 | 200 | 73 | 107 | 103 | 98 | 88 | 73 | 78 | ..... | ..... | ..... | ..... | ..... |
| Total | 892 | 1,009 | 1,165 | 1,190 | 1,212 | 1,245 | 1,267 | 1,126 | 1,072 | 1,006 | 967 | 954 | 1,018 | 881 | 1,003 | 980 | 1,053 | 1,032 |

Note:--This department will henceforth classify all mines with more than one opening, and where all coal is dumped over one tippie, as one mine only.

MINES GENERATING LIGHT CARBURETED HYDROGEN GAS (FIRE DAMP.)

One hundred and seven mines were reported during the year as generating fire damp, three less than during 1908. This was due to the fact that several mines were abandoned during the year which had previously been reported as generating fire damp.

One fatality was due to this cause during the year. Thos. D. Sutherin, employed as superintendent of the Eleanor mine, Belmont county, entered the mine with an open light shortly after having started the fan, for the purpose of looking after the pump. The mine at the time of the accident had been suspended for some time, and no one was in the mine but himself. He was found 600 feet from the bottom of the shaft. A complete description of this accident will be found in the report of District Mine Inspector Lot Jenkins, and also in the detailed description of fatal accidents. This mine was known to generate fire damp in dangerous quantities, and a short time before this accident, on April 19th, six men were severely burned by an explosion of gas, from the fire boss permitting them to enter places where standing gas had been found by failing to place a caution board up at the entrance to the places, as the law requires.

Two men were also seriously burned by an explosion of gas in the Trail Run No. Two mine, Guernsey county, and two slightly burned at the Florence mine, Belmont county; also one in Noble and one in Portage county.

It would seem that where persons have a knowledge of mines generating this dangerous element, that every precaution possible would be taken to guard against its dangers, but when mine officials, who, above all others, are supposed to use discretion and good judgment in matters of this kind, rush blindly in the face of such an element with open lights, and fire bosses becoming criminally negligent in the performance of their duties, it will not be wholly surprising to learn any day of some dire calamity which has befallen some of the other states in the country which many lives have been sacrificed. If mine officials will not, of their own accord in the responsible positions which they hold, obey the rules and observe such precautions as the case may require, the law should be so amended as to make it an offense punishable by not only heavy fine, but a term of imprisonment, such as would have a tendency to cause persons employed in this capacity to become more careful in look-

ing after the safety of the men entrusted to their care. A mine official's conduct should be above reproach, and he should set an example for those employed under him, for if there is a lack of care in those supposed to exercise discretion, there is a tendency on part of those employed in the mines to follow in the same direction, and become careless, each one carrying out his own wishes and desires regardless of the effect it may have on the safety of lives or protection of property.

**DETAILED LIST OF MINES WHICH GENERATE LIGHT
CARBURETED HYDROGEN GAS.**

ATHENS COUNTY.

| | | |
|-------------------------|----------------|----------------|
| Canaanville. | S. C. No. 10X. | S. C. No. 255. |
| Eclipse No. 3. | S. C. No. 201. | S. C. No. 256. |
| Hsylvania No. 23. | S. C. No. 209. | S. C. No. 266. |
| Luhrig Nos. 1, 2 and 3. | S. C. No. 210. | S. C. No. 267. |
| Northern Fuel No. 24. | S. C. No. 211. | S. C. No. 275. |
| New Pittsburg No. 9. | S. C. No. 212. | S. C. No. 281. |
| New Pittsburg No. 10. | S. C. No. 252. | S. C. No. 311. |
| S. C. No. 10. | S. C. No. 254. | S. C. No. 312. |

BELMONT COUNTY.

| | | |
|----------------|-----------|----------------|
| Big Run. | Dellora. | Neff No. 1. |
| Black Diamond. | Eleanor. | Provident. |
| Black Oak. | Florence. | Victor. |
| Captina. | Glen. | Virginia Hill. |
| Clifford. | Johnsons. | Wegee. |

COLUMBIANA COUNTY.

| | | |
|-------------|------------|-----------------|
| Big Walnut. | Niehelsel. | New Slope. |
| Garside. | | Salem. |
| McNab. | | West Pittsburg. |

GUERNSEY COUNTY.

| | | |
|------------------|--------------------|-------------------|
| Blue Bell. | Klondyke. | Old Orchard. |
| Black Top. | Little Trail Run. | Ohio No. 1. |
| Cleveland No. 1. | Little Kate No. 1. | Ohio No. 2. |
| Detroit. | Little Kate No. 2. | Puritan. |
| Forsythe. | Minnehaha. | Trail Run No. 1. |
| Hartford. | Midway. | Trail Run No. 2. |
| Imperial. | Murray Hill. | Valley. |
| Ideal. | | Walhonding No. 2. |
| Kingston. | | West Branch. |

HOCKING COUNTY.

New Pittsburg No. 7.

JACKSON COUNTY.

| | | |
|-------------|-----------------|------------------|
| Alma No. 2. | Globe. | Superior No. 9. |
| Domestic. | Superior No. 3. | Superior No. 12. |

JEFFERSON COUNTY.

| | | |
|-------------|-----------|-----------------------|
| Amsterdam. | La Belle. | La Grange. |
| Elizabeth. | | Rice or W. Pittsburg. |
| High Shaft. | | Zerbe. |

MAHONING COUNTY.

Lowellville.

NOBLE COUNTY.

| | | |
|--------|--------------------|------------|
| Laura. | Imperial or Noble. | Goldenrod. |
|--------|--------------------|------------|

DETAILED LIST OF MINES WHICH GENERATE LIGHT
CARBURETED HYDROGEN GAS—Concluded.

PERRY COUNTY.

Santoy No. 1.

Santoy No. 2.

PORTAGE COUNTY.

Hutson No. 4.

Hutson No. 8.

STARK COUNTY.

No. 17.

No. 20.

Geise No. 13.

No. 18.

Fox No. 12.

Pocock No. 3.

No. 19.

Willow Grove.

TUSCARAWAS COUNTY.

Beaver Dam No. 1.

Beaver Dam No. 2.

Goshen Shaft.

WAYNE COUNTY.

No. 22.

ACCIDENTS

COAL MINE ACCIDENTS AND THEIR PREVENTION.*

By J. A. Holmes.

(Note.—Published through the courtesy of the author.)

On my way East to this meeting from the ill-fated Cherry mine in Illinois, I was talking on the train with two gentlemen brought up under different conditions of life, with reference to this matter of lessening mine accidents. One of them said: "It is of no use to try, the miners are too careless." The other said: "It is no use to try, the operators are indifferent."

Neither of these judgments is correct, just, or helpful.

The purpose of this address is to point out in the briefest possible manner the salient features of the coal mining industry, to call attention to the fact that the present economic basis of this industry is fundamentally bad, and to suggest possible remedies for this bad situation.

If we are going to attempt seriously to reduce the loss of life and the waste of resources in this greatest of our mining industries, we must carry on investigations and inquiries to determine the causes and to devise preventive measures; we must promptly and adequately inform the miners and active mine officials of the results of such investigations and inquiries; we must revise our laws and regulations in accordance with the best information thus obtained; and we must look to a proper enforcement by the states of such laws and regulations. We must also go to the tap-root of the evil—that is, we must improve the economic conditions on which this great industry is based.

We must seek the needed improvement—not simply through one or two of these remedial measures, but through each and every one of them.

Our coal industry in its phenomenal growth has nearly doubled during each succeeding decade of the past 80 years. It has had to do more than keep pace with our increasing population, for, while it supplied less than one ton of coal per capita to the American people in 1870, it has had to supply nearly six tons per capita during 1907. Its growth has been too rapid for systematic development; and the industry today represents a great host of scattered, warring, discouraged elements, without organization or co-operation.

In this industry are now employed some 700,000 miners, who work at some 6,000 different mines and produce yearly about 500,000,000 tons of coal. Not only is the nation increasingly dependent upon this coal for its heat and light and for power for its manufacturing industries and transportation facilities, but this coal and other mineral products now contribute more than 65 per cent. of the total freight tonnage of the country.

The economic conditions upon which coal mining is based in this country are so fundamentally bad, and the evil consequences are so far-reaching as to both time and extent and are so essentially national in character, that this subject demands the earnest consideration of our best statesmen, as well as of our best engineers.

There can be no permanent industry without reasonable profits. It is unjust and irrational that in this great and essential branch of industry reasonable profits or even the payment of operating expenses should be dependent upon methods involving unnecessary sacrifice of human life and unnecessary waste of resources which we can neither replace nor restore and which will be essential to the larger future development of the country.

*Address delivered, with the approval of the Director of the U. S. Geological Survey, at the tenth annual meeting of the National Civic Federation, New York, November 23, 1909.

The following observations will serve to make this situation clearer:

1. In spite of this rapid growth in our demand for coal, the normal productive capacity of our coal mines if operated continuously would greatly exceed this demand.

2. Ruinous competition exists not only between the operators in the same field, but between the operators of one field as against those in another field or in another state where different mining laws and regulations are in force.

3. This competition is, first of all, driving out of the business the small operators, except where they find protection under local freight rates, and is forcing even the larger operator to mine coal under conditions which he cannot approve but from which he finds no escape. If he and his fellow operators endeavor to "get together" and place the price of coal at the mine on a reasonable basis they go to jail under either a federal or a state statute; and, as the only alternative, each must live (or succumb) by underbidding the other, which he can do only through following the wasteful and unsafe mining methods which prevail in this country today in spite of the desire of every operator to improve them.

4. Even when the demand for coal and the prices are at their best, under existing conditions the operator can mine only that part of his coal which can be taken out most cheaply and sold at the higher prices; and the remainder must be left underground in such shape as may preclude its future recovery. And thus we waste yearly approximately 250,000,000 tons of the nation's fuel supply.

5. The American mine owner is as humane as the mine owner of any other country, and he would like to follow every practice and use every appliance for safety to be found in Great Britain, or France, or Belgium, or Germany, or elsewhere, but he pays his miners higher wages and, at the same time, receives for his coal at the mine half the price received for similar coal by the operator in those countries; and he must employ miners an increasingly large percentage of whom come to him unfamiliar with either the practices of the industry or the language and traditions of the country.

6. The penalty which the nation is paying for this bad system is this increasing waste of essential resources and the still more unpardonable increasing waste of human life—the yearly loss of 250,000,000 tons of coal and the killing or injuring yearly of 8,000 to 10,000 men.

The fact cannot be too clearly emphasized that it is the nation that pays this penalty; and that its increasing evil results will lessen the nation's future development.

The remedies for this bad situation are:

(a) Investigations and inquiries, such as are now being conducted by the government, as to the causes of mine explosions and other similar investigations as to the causes of mine accidents of other kinds and as to the methods of prevention.

(b) The dissemination of information among the miners and the active mine officials as to these causes and remedies.

(c) The training of men at each mine as to the best methods of using explosives, using electricity, handling gases and dust, and timbering, preventing and extinguishing mine fires, as well as the methods of rescue work and of first aid to the injured.

(d) The development of better, more uniform, and enforceable state mining laws, rules and regulations, based upon accurate data and experience.

(e) Active, determined co-operation between the miners and the mine management and the state's inspectors in the enforcement of these rules and

regulations, with a view to the maintenance of the safest possible conditions in every mine. This means strict and rational discipline in and about every mine among miners and mine officials.

(f) State mine inspectors should have better support in the way of compensation and allowance for travel expenses, greater permanence in office, and freedom from political and other outside influences; and wherever possible their efforts should be supplemented by the employment of special private inspectors by each mining company.

The above are all parts of the program for lessening and alleviating mine accidents, but they do not complete the program. It is an essential part of this program that:

(g) The ruinous competitive systems upon which coal mining in the United States is based at the present time should be changed and that the price paid for coal at the mines should be such as will permit and secure safe and efficient mining—mining unaccompanied by either this large loss of life or waste of resources, mining which can have due regard not only to the safety but also to the health and comfort of the men who toil underground and whose labor is so essential to the welfare of the nation. All this can be done without adding appreciably to the burden of the average American citizen, without any increase in the price of coal at the poor man's cottage, and without the risk of any unreasonable restraint of trade.

An increase of ten or twenty cents per ton in the price of coal at the mine would greatly increase the possibilities for safety and clean mining and would not necessarily mean any increase in the cost of power to the consumer, who in many cases could save more than that much per ton by adopting more efficient methods in the use of this fuel. Nor is it believed that large consumers of coal would object to this reasonable increase in price, in behalf of safety, clean mining, and reasonable operating profits, if assured that their competitors would have to pay the same and that the price would be reasonably stable.

The injustice of the situation is apparent when it is seen that of the \$3.00 or \$6.00 per ton paid for coal at the point of consumption only \$1.00 goes back to the mine to be divided between the miner, the operator, and the land owner, to cover investments in mine equipment and development, all the labor and costs and dangers of mining operations, and the loading of the coal on the cars ready for shipment.

It is for the law makers to devise a plan that will permit this needed cooperation among the mine operators in behalf of greater safety for the miner, less waste of resources, and reasonable profit on investments, and that will also protect the public against the possible abuse of this privilege.

The coal industry needs and deserves fair treatment at the hands of the American people, and upon its receipt of such treatment depends in large measure not only the welfare of the operators—though nobody cares about them—but also the welfare of the 700,000 miners who daily risk their lives in supplying the fuel for the nation's industry and commerce and the heat and light for the nation's comfort and convenience, and the welfare of the industry itself as an essential part of our future national development.

**TOTAL NUMBER OF FATAL, SERIOUS AND MINOR ACCIDENTS FROM
JANUARY 1, 1909, TO DECEMBER 31, 1909, INCLUSIVE.**

| Counties. | Fatal. | Serious. | Minor. | Total. |
|-------------------|------------|------------|------------|------------|
| Athens | 9 | 59 | 20 | 88 |
| Belmont | 36 | 95 | 20 | 151 |
| Carroll | 2 | 4 | 3 | 9 |
| Columbiana | 5 | 9 | 3 | 17 |
| Coshocton | 1 | 4 | 4 | 9 |
| Guernsey | 9 | 74 | 31 | 114 |
| Harrison | 2 | 12 | 4 | 18 |
| Hocking | 4 | 10 | 3 | 17 |
| Jackson | 3 | 15 | 5 | 23 |
| Jefferson | 19 | 68 | 44 | 131 |
| Lawrence | 1 | 3 | 2 | 6 |
| Mahoning ..... | ..... | 1 | ..... | 1 |
| Meigs | 3 | 7 | 4 | 14 |
| Morgan ..... | ..... | 8 | 6 | 14 |
| Muskingum | 2 | 4 | 2 | 8 |
| Noble | 2 | 15 | 5 | 22 |
| Ottawa | 1 | 6 | 22 | 29 |
| Perry | 3 | 19 | 20 | 42 |
| Portage | 1 | 4 | 4 | 9 |
| Scioto | 1 | 1 | ..... | 2 |
| Stark | 2 | 10 | 8 | 20 |
| Summit ..... | ..... | 3 | 1 | 4 |
| Tuscarawas | 7 | 32 | 14 | 53 |
| Vinton | 1 | 4 | 1 | 6 |
| Wayne | 1 | ..... | ..... | 1 |
| Total..... | 115 | 467 | 226 | 808 |

TABLE SHOWING THE NUMBER OF FATAL ACCIDENTS OCCURRING IN THE MINES OF THE STATE DURING THE YEAR 1909, AND CAUSES TO WHICH THEY WERE ATTRIBUTABLE.

| Counties. | Falls of roof. | Falls of coal. | Mining machines. | Mine cars. | Motors. | Electric wires. | Explosion of fire damp. | Explosion of powder and premature explosions. | Explosion of dust caused by blown out shot. | Returning to unexploded shots. | Tippie collapsing. | Overcome by carbonic acid gas after firing shot. | Miscellaneous. | Total. | Americans. | Foreigners. | Per cent. of Americans killed. | Per cent. of foreigners killed. |
|-----------------|----------------|----------------|------------------|------------|---------|-----------------|-------------------------|---|---|--------------------------------|--------------------|--|----------------|--------|------------|-------------|--------------------------------|---------------------------------|
| Athens..... | 4 | 1 | | 1 | 1 | | | | | 2 | | | | 9 | 9 | | | 61 |
| Belmont..... | 20 | | 2 | | | 1 | 1 | 3 | | | | | 1 | 36 | 14 | 22 | 36 | |
| Carroll..... | 2 | | | | | | | | | | | | 1 | 3 | 3 | | | |
| Columbiana..... | | | | | | | | | | | | | | 5 | 5 | | | |
| Coshocton..... | | | | | | | | | | | | | 1 | 1 | 1 | | | |
| Guernsey..... | 4 | | | 5 | | | | | | | | | | 9 | 7 | | 78 | |
| Harrison..... | 1 | | | | | | | 1 | | | | | | 4 | 4 | | | |
| Hocking..... | 2 | 1 | | 1 | | | | | | | | | | 4 | 4 | | | |
| Jackson..... | 3 | | | | | | | | | | | | | 3 | 3 | | | |
| Jefferson..... | 15 | | | 2 | 2 | | | | | | | | | 10 | 1 | 12 | 37 | 6 |
| Lawrence..... | 1 | | | | | | | | | | | | | 1 | 1 | | | |
| Meigs..... | 3 | | | | | | | | | | | | | 3 | 3 | | | |
| Muskingum..... | 1 | | | 1 | | | | | | | | | | 2 | 2 | | | |
| Noble..... | 1 | | | | 1 | | | | | | | | | 1 | 1 | 1 | | |
| Ottawa..... | | | | | | | 1 | | | | | | | 1 | 1 | | | |
| Perry..... | 1 | | | 1 | | | | | | | 1 | | | 3 | 3 | | | |
| Portage..... | | | | | | 1 | | | | | | | | 1 | 1 | | | |
| Scioto..... | 1 | | | | | | | | | | | | | 1 | 1 | | | |
| Stark..... | 1 | | | | | | | | | 1 | | | | 2 | 2 | | | |
| Tuscarawas..... | 6 | | | 1 | | | | | | | | | | 7 | 5 | 1 | 72 | 28 |
| Vinton..... | 1 | | | | | | | | | | | | | 1 | 1 | | | |
| Wayne..... | 1 | | | | | | | | | | | | | 1 | 1 | | | |
| Total..... | 68 | 2 | 2 | 20 | 4 | 2 | 1 | 5 | 2 | 3 | 1 | 2 | 3 | 115 | 72 | 43 | 161 | 37 |

*Average per cent. of Americans and foreigners killed in the State during the year 1909.

TABLE SHOWING PERCENTAGE OF EACH CAUSE TO WHICH ACCIDENTS WERE ATTRIBUTABLE.

| | 1908. | 1909. |
|------------------------------------|--------|--------|
| Falls of Roof..... | 61.8 | 59.1 |
| Falls of Coal..... | 1.9 | 1.7 |
| Mine Cars..... | 14.8 | 17.4 |
| Motors..... | 2.8 | 3.5 |
| Mining Machines..... | .9 | 1.7 |
| Fire Damp..... | 1.8 | .9 |
| Premature Explosions..... | 3.7 | 4.4 |
| Shocks from Electricity..... | 4.7 | 1.7 |
| Descending Cage..... | .9 | ..... |
| Falling Timber..... | .9 | ..... |
| Falls from Tippie..... | 1.8 | ..... |
| Shot through Rib..... | .9 | ..... |
| Returning to Unexploded Shot..... | ..... | 2.7 |
| Overcome by Carbonic Acid Gas..... | ..... | 1.7 |
| Exp. Dust from Blown-out Shot..... | ..... | 1.7 |
| Tippie Collapsing..... | ..... | .9 |
| Miscellaneous..... | 3.1 | 2.6 |
| | 100.00 | 100.00 |

ACCIDENT AND CAUSES TO WHICH THEY ARE ATTRIBUTABLE.

During the year 1909, one hundred and fifteen (115) deaths were reported occurring in the mines of the state from various causes. This was an increase of three as compared with the year 1908. However, the tonnage showed an increase of almost one and a half million tons, and more tons of coal were mined to the life lost than was reported for the previous year.

The year was also marked by the number of deaths reported from the small country mines during the month of December, six being reported in that month. In two of these accidents reported two men were killed in each. This class of mines is very difficult of supervision, as they operate only for a very short time during the winter months, and then only for the purpose of securing domestic fuel, and consequently the proper ventilation is not always maintained and measures of safety not properly looked after.

The greatest number of accidents were reported from Belmont county, 36 in all, 20 of which were caused by fall of roof and 8 by mine cars; Jefferson reported 19, 15 of which were killed by falls of roof and 2 by mine cars; Athens and Guernsey counties each reported 9 fatal accidents, Tuscarawas 7 and Columbiana 5. These counties also reported the greatest number of serious accidents: Athens, 59; Belmont, 95; Guernsey, 74; Jefferson, 68, and Tuscarawas 32.

Falls of roof were accountable for 68 deaths, or 59.1 per cent. during the year, 35 being reported from Belmont and Jefferson county, or over half the number reported from all the rest of the counties; mine cars caused the death of 20 persons, or 17.4 per cent. There was a decrease of 3 per cent. in the number killed by falls of roof, while those killed by mine cars increased almost 3 per cent.

Two persons met death due to electricity, one in the Hutson mine, Portage county, and the other in the Barton mine, Belmont county, both of which were caused by the high voltage. This was 3 less than occurred from this cause during the year 1908. Motors caused the death of four persons, and premature explosions and explosions of powder, 5; 3 were killed from returning to unexploded shots, and 2 shot-firers were killed by the force of an explosion in Columbiana county which was due to the rapid firing of shots and blown-out shots resulting from improper drilling of holes in the solid or unmined coal, which ignited and exploded the dust and smoke.

From a comparison of the tonnage table it will be found that the counties reporting the greatest tonnage also reported the greatest num-

ber of fatalities, Belmont ranking first in production, Jefferson third, Athens second, and Guernsey fourth. The proportionately great number of accidents in Belmont and Jefferson counties, as has been stated before, is largely due to the nature of the roof, and the seeming negligence on part of employes to properly protect themselves from this falling roof, as many of these accidents could have been prevented by posting the stone.

Five persons connected with mines in an official capacity lost their lives while in the performance of their duties during the year, a very unusual occurrence. The superintendent of the Eleanor mine, Belmont county, was killed by an explosion of gas, a full description of which will be found in the detailed synopsis of fatal accidents, and in the report of District Mine Inspector Lot Jenkins. The fire boss of the Blue Bell mine, Guernsey county, was killed by a fall of slate. The fire boss of the Domestic mine, Jackson county, died from natural causes while in the performance of his daily duties. Peter O'Malley, mine boss of the Whittacre Glessner mine, Belmont county, was killed by being caught between mine car and roof timber, and F. B. McKinney, employed as mine boss at the Clifford mine, Belmont county, was killed by a trip of runaway cars on the slope. A detailed description of these accidents will be found in the detailed description of fatal accidents.

There were 115 fatal, 467 serious and 226 minor accidents, or 808 in all, 100 more than in 1908. There was 1 fatality for every 409 persons employed; 241,348 tons of coal mined to the life lost, and 2.4 deaths per 1,000 employed.

TABLE SHOWING THE NUMBER AND CHARACTER OF ACCIDENTS WHICH RESULTED FROM THE PRINCIPAL SOURCES AS REPORTED FROM EACH COUNTY FROM JANUARY 1, 1909, TO DECEMBER 31, 1909, INCLUSIVE.

| Counties. | Falls of Roof. | | | Falls of Coal. | | | Mine Cars. | | | Motors and Mining Machines. | | | Exp. of Powder and Prem. Exp. | | | Explosions of Gas. | | | Electric Wires. | | | Miscellaneous. | | | Total. | | | Grand Total. |
|------------------|----------------|-----|-----|----------------|-----|-----|------------|-----|-----|--|---|-----|-------------------------------|-----|-----|--------------------|-----|-----|-----------------|-----|-----|----------------|-----|-----|--------|-----|-----|--------------|
| | F. | S. | M. | F. | S. | M. | F. | S. | M. | F. | S. | M. | F. | S. | M. | F. | S. | M. | F. | S. | M. | F. | S. | M. | | | | |
| Athens | 4 | 19 | 3 | 1 | 6 | ... | 1 | 16 | 6 | ^{*5} ⁺¹ ⁺⁵ ⁺¹ | ^{*2} ⁺¹ | ... | 2 | 1 | ... | ... | ... | ... | ... | ... | ... | 2 | 6 | 7 | 9 | 59 | 20 | 88 |
| Belmont | 20 | 48 | 12 | ... | 6 | 1 | 8 | 25 | 4 | ⁺² ^{*6} | ⁺¹ | 3 | 2 | ... | 1 | 6 | 2 | 1 | ... | ... | 1 | 1 | ... | 36 | 95 | 20 | 151 | |
| Carroll | 1 | ... | ... | ... | ... | 1 | ... | 2 | ... | ⁺¹ | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | ... | 1 | 2 | 4 | 3 | 9 | |
| Columbiana | 2 | 3 | 1 | ... | ... | 1 | ... | 2 | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 3 | 3 | 1 | 5 | 9 | 3 | 17 | |
| Coshocton | 2 | 2 | ... | ... | ... | ... | ... | 1 | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | 1 | 1 | 4 | 4 | 9 | |
| Guernsey | 4 | 25 | 9 | ... | 11 | 1 | 5 | 20 | 12 | ^{*5} ⁺³ | ⁺² | ... | 4 | ... | 2 | 1 | ... | ... | ... | ... | 4 | 6 | 9 | 74 | 31 | 114 | | |
| Harrison | 1 | 6 | 1 | ... | ... | ... | ... | 5 | 1 | ⁺¹ | ⁺¹ | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | 2 | 12 | 4 | 18 | |
| Hocking | 2 | 3 | 1 | 1 | ... | ... | ... | 1 | 3 | 1 | ^{*1} ⁺¹ | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 1 | 4 | 10 | 3 | 17 | |
| Jackson | 3 | 10 | 3 | ... | 1 | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 | 1 | 3 | 15 | 5 | 23 | |
| Jefferson | 15 | 43 | 18 | ... | 3 | 1 | 2 | 13 | 12 | ^{*2} ⁺³ | ⁺¹ | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | 4 | 12 | 19 | 68 | 44 | 131 | |
| Lawrence | 1 | 2 | 2 | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 3 | 2 | 6 | |
| Mahoning | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | |
| Meigs | 3 | 3 | 2 | ... | 1 | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 1 | |
| Morgan | 2 | 2 | ... | ... | ... | ... | ... | 5 | 2 | ... | ^{*1} | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 2 | 3 | 7 | 4 | 14 | |
| Muskingum | 1 | 2 | ... | ... | ... | ... | 1 | 1 | ... | ⁺¹ | ⁺¹ | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | 8 | 6 | 14 | |
| Noble | 1 | 5 | 2 | ... | 3 | ... | ... | 5 | 1 | ^{*1} | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | 1 | 1 | 2 | 15 | 5 | 22 | |
| Ottawa | ... | ... | 6 | ... | ... | ... | ... | 2 | 3 | ... | ⁺¹ | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 4 | 12 | 1 | 6 | 22 | 29 | ... | |
| Perry | 1 | 9 | 6 | ... | 2 | ... | 1 | 1 | 5 | ... | ^{*2} ⁺⁴ ⁺⁴ | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 | 19 | 20 | 42 | |
| Portage | ... | ... | 1 | ... | 1 | ... | ... | 1 | ... | ⁺¹ | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | 1 | 1 | 1 | 1 | 4 | 4 | 9 | |
| Scioto | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | 2 |
| Stark | 1 | 4 | 3 | ... | 1 | 2 | ... | 2 | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 3 | 1 | 2 | 10 | 8 | 20 | |
| Summit | 1 | 1 | 1 | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 | 1 | 4 | |
| Tuscarawas | 6 | 8 | 5 | ... | 3 | 3 | 1 | 13 | 4 | ^{*1} | ... | 3 | ... | ... | ... | ... | ... | ... | ... | ... | 4 | 2 | ... | 7 | 32 | 14 | 53 | |
| Vinton | 1 | 3 | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 4 | 1 | 6 | |
| Wayne | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 1 | |
| Total..... | 63 | 200 | 80 | 2 | 40 | 11 | 20 | 121 | 57 | 6 | 37 | 19 | 5 | 13 | 2 | 1 | 11 | 4 | 2 | ... | ... | 11 | 45 | 53 | 115 | 467 | 226 | 808 |

*Number killed and injured by motors.

†Number killed and injured by mining machines.

TABLE SHOWING THE NUMBER AND CHARACTER OF ACCIDENTS WHICH OCCURRED FROM JANUARY 1, 1909, TO DECEMBER 31, 1909, AND TO WHAT SOURCES THEY WERE ATTRIBUTABLE, AND PERCENTAGE OF EACH.

| Various Causes of Accidents. | Fatal. | Serious. | Minor. | Total. | Percentage |
|------------------------------|--------|----------|--------|--------|------------|
| Falls of Roof | 68 | 200 | 80 | 348 | 43.2 |
| Falls of Coal..... | 2 | 40 | 11 | 53 | 6.1 |
| Mine Cars | 20 | 121 | 57 | 198 | 24.6 |
| Mining Machines | 2 | 24 | 13 | 39 | 5.2 |
| Motors | 4 | 13 | 6 | 23 | 2.6 |
| Electric Wires | 2 | ..... | ..... | 2 | .3 |
| Premature Explosions ... | 5 | 13 | 2 | 20 | 2.4 |
| Explosions of Gas..... | 1 | 11 | 4 | 16 | 1.9 |
| Mules and Horses..... | ..... | 5 | 9 | 14 | 1.7 |
| Blown-out Shot | 2 | ..... | ..... | 2 | .3 |
| Miscellaneous | 9 | 40 | 44 | 93 | 11.7 |
| Totals..... | 115 | 467 | 226 | 808 | 100.00 |

TABLE SHOWING PER CENT. OF INCREASE OF TONNAGE, PER CENT. OF INCREASE AND DECREASE IN NUMBER OF FATAL AND SERIOUS ACCIDENTS AND NUMBER OF TONS MINED FOR EACH FATAL AND SERIOUS ACCIDENT FOR THE YEARS 1904, 1906, 1907, 1908 AND 1909, AS COMPARED WITH 1903.

| Years. | Number Tons Coal Produced for Each Year. | Per Cent. of Increase in Tonnage in 1904, 1907, 1908 and 1909 as Compared with the Year 1903. | Number of Fatal Accidents for Each Year. | Decrease in the Number of Fatal Accidents in 1904, 1906, 1907, 1908 and 1909 as Compared with 1903. | Increase in the Number of Fatal Accidents in 1904, 1906, 1907, 1908 and 1909 as Compared with the Year 1903. | Per Cent. of Decrease of Fatal Accidents in 1904, 1906, 1907, 1908 and 1909 as Compared with the Year 1903. | Per Cent. of Increase of Fatal Accidents in 1904, 1906, 1907, 1908 and 1909 as Compared with 1903. | Number Tons of Coal Mined for Each Fatal Accident. | Number of Serious Accidents for Each Year. | Per Cent. of Increase of Serious Accidents in 1904, 1906, 1907, 1908 and 1909 as Compared with 1903. | Number of Tons Mined for Each Serious Accident. | Decrease in the Number of Tons Mined for Each Serious Accident. |
|-----------|--|---|--|---|--|---|--|--|--|--|---|---|
| 1903..... | 24,573,266 | ..... | 124 | ..... | ..... | ..... | ..... | 198,170 | 309 | ..... | 79,525 | ..... |
| 1904..... | 24,583,815 | .04% | 118 | 6 | ..... | 4.8% | ..... | 208,337 | 316 | 2.2% | 77,797 | 1,728 |
| 1905..... | 25,834,657 | 5% | 114 | 10 | ..... | 8% | ..... | 226,620 | 372 | 20% | 69,448 | 10,077 |
| 1906..... | 27,213,495 | 11% | 127 | ..... | 3 | ..... | 2% | 214,279 | 384 | 24% | 70,868 | 8,657 |
| 1907..... | 32,365,949 | 32% | 153 | ..... | 29 | ..... | 23% | 212,196 | 493 | 59% | 65,854 | 13,671 |
| 1908..... | 26,287,800 | 7% | 112 | 12 | ..... | 9% | ..... | 234,713 | 426 | 37.9% | 61,708 | 17,817 |
| 1909..... | 27,755,032 | 13% | 115 | 9 | ..... | 7% | ..... | 241,348 | 467 | 51.1% | 59,433 | 20,092 |

TABLE SHOWING THE NUMBER OF FATAL AND SERIOUS ACCIDENTS, NUMBER TONS OF COAL PRODUCED, NUMBER OF EMPLOYEES, MINING MACHINES, AND MOTORS IN THE YEARS 1904, 1906, 1907, 1908 AND 1909, AS COMPARED WITH THE YEAR 1903.

| Years. | Number of Employees. | Per Cent. of Increase of Employees in 1904, 1906, 1907, 1908 and 1909 as compared with 1903. | Number of Employees for Each Fatal Accident. | No. Fatal Accidents. | Per Cent. of Increase in the No. of Fatal Accidents in 1904, 1906, 1907, 1908 and 1909, as compared with 1903. | Per Cent. of Decrease in No. of Fatal Accidents in 1904, 1906, 1907, 1908 and 1909, as compared with 1903. | No. of Employees for Each Serious Accident. | Per Cent. of Increase for Each Serious Accident for the No. Employed in 1904, 1906, 1907, 1908, and 1909, as compared with 1903. | Per Cent. of Decrease for Each Serious Accident for the No. Employed in 1904, 1906, 1907, 1908 and 1909, as compared with 1903. | No. Mining Machines in Operation. | Increase in No. Mining Machines in 1904, 1906, 1907, 1908 and 1909, as compared with 1903. | No. of Mine Motors in Operation. | Increase in No. of Motors in 1904, 1906, 1907, 1908 and 1909, as compared with 1903. |
|-----------|----------------------|--|--|----------------------|--|--|---|--|---|-----------------------------------|--|----------------------------------|--|
| 1902..... | 41,396 | ..... | 334 | 124 | ..... | ..... | 134 | ..... | ..... | 774 | ..... | 143 | ..... |
| 1904..... | 45,834 | 10% | 388 | 118 | ..... | 4.8% | 145 | 8% | ..... | 975 | 210 | 186 | 43 |
| 1905..... | 44,193 | 6% | 388 | 114 | ..... | 8% | 119 | ..... | 11% | 1,146 | 372 | 214 | 71 |
| 1906..... | 46,501 | 12% | 366 | 127 | ..... | ..... | 121 | 10% | 10% | 1,268 | 492 | 275 | 132 |
| 1907..... | 47,876 | 13% | 313 | 153 | 23% | ..... | 97 | 28% | 28% | 1,396 | 632 | 359 | 216 |
| 1908..... | 50,267 | 21% | 449 | 112 | ..... | 9% | 118 | 19% | 19% | 1,445 | 671 | 383 | 240 |
| 1909..... | 47,019 | 13% | 409 | 115 | ..... | 7% | 101 | 25% | 25% | 1,395 | 621 | 405 | ..... |

Note:—

Per cent. increase of fatal accidents in 1909 over 1908.....

2.7%

Per cent. of increase in tonnage in 1909 over 1908.....

4.3%

TABLE SHOWING THE NUMBER OF TONS OF COAL MINED TO THE LIFE LOST, TO THE SERIOUS INJURY AND TO THE TOTAL NUMBER OF FATAL AND SERIOUS ACCIDENTS FOR EACH YEAR SINCE THE CREATION OF THE DEPARTMENT.

| Years. | Number of Fatal Accidents. | Number of Serious Accidents. | Number of Tons Mined to the Persons Killed or Seriously Injured and Number of Tons to the Total. | | | Name of Chief Mine Inspector. |
|---------------------------|----------------------------|------------------------------|--|----------|---------|-------------------------------|
| | | | Fatal. | Serious. | Total. | |
| Fiscal 1874..... | 20 | 80 | 108,919 | 4,844 | 31,419 | Andrew Roy. |
| " 1875..... | 23 | 40 | 202,667 | 121,606 | 77,210 | " |
| " 1876..... | 13 | 70 | 269,999 | 50,000 | 42,168 | " |
| " 1877..... | 30 | 39 | 175,000 | 134,615 | 76,087 | " |
| " 1878..... | 20 | | | | | Jas. D. Posten. |
| " 1879..... | | | | | | David Owen. |
| " 1880..... | 22 | 61 | 292,624 | 114,754 | 84,217 | Andrew Roy. |
| " 1881..... | 29 | | 283,621 | | | " |
| " 1882..... | 25 | | 378,000 | | | " |
| " 1883..... | 26 | | 316,516 | | | " |
| " 1884..... | 26 | 40 | 226,636 | 143,433 | 86,932 | Thos. B. Bancroft. |
| " 1885..... | 51 | 32 | 244,258 | 153,258 | 94,170 | " |
| " 1886..... | 43 | 65 | 194,308 | 194,772 | 78,104 | " |
| " 1887..... | 36 | 75 | 286,158 | 137,356 | 92,808 | " |
| " 1888..... | 29 | 79 | 376,239 | 138,113 | 100,934 | Robt. M. Haseltine. |
| " 1889..... | 33 | 52 | 330,527 | 209,757 | 128,322 | " |
| " 1890..... | 42 | 52 | 280,687 | 226,708 | 125,413 | " |
| " 1891..... | 44 | 66 | 296,595 | 197,730 | 118,636 | " |
| " 1892..... | 42 | 93 | 347,929 | 157,129 | 108,170 | " |
| " 1893..... | 32 | 123 | 463,378 | 120,553 | 95,655 | " |
| " 1894..... | 45 | 116 | 364,672 | 102,674 | 73,976 | " |
| " 1895..... | 52 | 152 | 263,151 | 90,025 | 67,078 | " |
| " 1896..... | 41 | 159 | 314,942 | 81,211 | 64,563 | " |
| " 1897..... | 40 | 142 | 311,221 | 87,668 | 68,400 | " |
| " 1898..... | 52 | 155 | 270,463 | 90,736 | 67,913 | " |
| " 1899..... | 59 | 204 | 269,643 | 77,985 | 60,490 | " |
| " 1900..... | 68 | 207 | 285,686 | 92,848 | 70,643 | Elmer G. Biddison. |
| " 1901..... | 72 | 276 | 282,240 | 73,627 | 58,394 | " |
| " 1902..... | 81 | 298 | 293,818 | 80,299 | 63,138 | " |
| " 1903..... | 114 | 324 | 215,555 | 75,843 | 56,103 | " |
| *Nov. 15-Dec. 31, 1903... | 22 | 26 | | | | " |
| Calendar year 1904... | 118 | 316 | 208,337 | 77,797 | 58,984 | George Harrison. |
| Calendar year 1905... | 114 | 372 | 226,628 | 69,448 | 53,158 | " |
| Calendar year 1906... | 127 | 384 | 214,279 | 70,868 | 53,255 | " |
| Calendar year 1907... | 153 | 493 | 211,542 | 65,651 | 50,102 | " |
| Calendar year 1908... | 112 | 426 | 234,713 | 61,708 | 48,862 | " |
| Calendar year 1909... | 115 | 467 | 241,348 | 59,433 | 47,689 | |

NOTE:—Fatal accidents in calendar year 1903 were 124. Serious accidents in calendar year 1903 were 309.

*The 22 fatal and 26 serious accidents are not included in the fiscal year 1903 nor in the calendar year 1904.

DETAILED SYNOPSIS OF FATAL ACCIDENTS OCCURRING IN THE MINES
OF THE STATE OF OHIO FOR THE YEAR 1909.

ATHENS COUNTY.

FALL OF ROOF.

May 14th.—Henry Thompson, American, 55 years old. Injured by fall of roof and bone coal. Deceased had fired a rib shot which apparently had been placed too high, shattering the roof, and while working the coal out from under it, it fell injuring him so that he died the same day. Two posts were set within 4 feet of the face and rib.

FALL OF ROOF.

June 16th.—Pearl Anders, American, 28 years old. Killed by a fall of rock in room No. 5, first west entry, in the Edgel and Young mine. Room was 21 feet wide, and no posts were set within 38 feet of the face, and none appeared in or near the face. The mine had recently been working in the solid rock top, and timbering was not considered necessary, but the top in this place had gotten faulty and timbering was neglected. If timber had been provided, and the place properly posted, the accident could have been avoided.

FALL OF ROOF.

July 27th.—August Osey, American, 59 years old. Killed in the Doanville No. 1 mine, by a fall of splint coal on what was known as the Old Doanville entry. Deceased and partner were drawing entry pillars and stumps, which are overlaid with two feet of splint coal. This is taken down after the stumps are drawn. They had just had a fall of splint and were starting to load a car at the edge of the break when the second fall came, and caught deceased. His partner states that the place was not examined before they started to load the car.

MOTOR.

Injured August 10th; died August 18th.—Edw. Harold, American, 25 years old. Injured in the New York No. 33 mine. Deceased was injured on a gathering motor by coming in contact with empty cars on the main south entry, between one and two, and three and four east. Witnesses state that while the motor was going in they cut a part of the trip off at first east, and while south with the others, the cars at the first east, being on a grade, moved south about 100 feet. The motorman on coming out of the south with a part of a loaded trip, ran into the cars at this point where he did not expect them, causing injuries from which he died.

MOTOR.

August 17th.—Jos. E. Hooper, American, 17 years old. Killed in the Sunday Creek No. 266 mine. Deceased was employed as a motor brakeman, and

fell in front of a haulage motor and was instantly killed. The motorman stated that he was not aware that riding on the front end of a motor was prohibited, as he had only been running the motor about three weeks.

FALL OF ROOF.

August 25th.—Maroni McWhorter, American, 17 years old. Killed in the Hocking mine by a fall of slate in room No. 27 on the 4th east entry. Deceased was employed only about four months as a miner and on the day of the accident was working alone, his partner not working that day. The place was fairly well timbered with plenty of timber near the face. The mine boss visited the room at nine o'clock, and states that he did not notice anything dangerous, and did not know the boy was working alone. The body was found at 2:30 o'clock.

FALL OF ROOF.

September 14th.—Chas. Frost, American, 32 years old. Killed in the Bailey mine, by a fall of slate at the face of his working place, and died September 19th. This mine was a small opening worked for the purpose of getting out house coal, and was in about 75 feet, and a room turned too close to the crop to be worked with any degree of safety.

MISCELLANEOUS.

September 22nd.—Samuel and Harley Coakley, Americans, 49 and 16 years old. Were instantly killed in the Nelsonville No. 2 Clay mine, at the face of the 6th south entry by approaching a shot that held fire. It is claimed by an employe who was working about 100 feet from the accident that the deceased had only lit one charge composed of powder and dynamite, and that the powder exploded but that the dynamite did not ignite until a minute or so later. District Mine Inspector Jno. L. McDonald ordered the company to establish a rule prohibiting any miner from returning after lighting their shots until the following day.

BELMONT COUNTY.

POWDER EXPLOSION.

Injured December 29th, 1908; died January 9th, 1909.—Isaac Fry, an American, 48 years old. Injured by an explosion of powder in room 21, third west entry, in the Black Diamond mine. Deceased neglected to place top on a five-pound can of powder after filling a cartridge before he placed his lamp and cap, which had been put at a safe distance away from the keg; a spark from his lamp ignited the powder, severely burning him about the face, hands and left side of body, from which he died. The attending physician claimed that he was addicted to the use of laudanum, which had its effect on his death.

MINING MACHINE.

Injured January 14th; died January 15th, 1909.—Chas. Wiles, American, 23 years old. Caught in the bits of a mining machine and both legs cut off in

the Glen mine. Accident occurred in room No. 13, sixth west entry, while he and his partner were trying to extricate the machine. Six runs had been made, when the key in the feed wheel broke, and the cutter-head would not back out. They had been endeavoring to get the machine from under the coal by different methods; the chain would turn round but would not back out. The machine was barred in an angle position, and the chain had backed out 18 inches, and had caught there. While his partner was gone for a pick, Wiles attempted to step over the machine and was caught. The machine was a Morgan-Gardner, and was not equipped with a shield. It is claimed that the law requiring shields was complied with on all but two machines.

MINE CARS.

February 3rd.—Jno. Evans, American, 24 years old. Was killed at the Provident mine, and on the date of the accident the mine was not in full operation, only a few men employed cleaning out some slate. Deceased was employed on the stone dump, but the mine being idle he was both loading and unloading, and the regular engineer was not running the engine at the time. He had taken a car of slate to the dump and returned to the tippie in front of and beside the empty car, when the car stopped ran back on the track and started up again. He attempted to get on the front end of the car and slipped and fell in front of it, and was rolled eight or ten feet, throwing the empty car off the track. Melie Yovish, gathering coal within ten feet of deceased, made no sign to the engineer to stop the car, nor rendered him any assistance, until the car jumped the track.

FALL OF ROOF.

February 4th.—J. E. Savage, American, 61 years old. Killed by a fall of stone in the Kirkwood mine. A three-run cut had been partly loaded with one post under the stone, there being a slip in the stone to where the post had been set up, leaving the stone that fell without any support. Deceased had been warned by the District Mine Inspector the day before and also by the mine boss. Room was 150 feet deep and break-through close to the face.

FALL OF ROOF.

Injured December 4th, 1908; died February 6th, 1909.—Frank Seclé, Hungarian, 28 years old. Injured in the Florence mine. Deceased was working in as good a place as there was in the mine, in the 4th west entry off 4th south, which had been driven quite a distance, there being no soapstone overlaying the coal, but a roll came in the roof and ran across the place at an angle of about 45 degrees, and a piece of this fell out. The irregularity appeared only after the piece fell out of the roof. Distance from last breakthrough, 64 feet.

POWDER EXPLOSION.

Injured February 9th; died February 22nd, 1909.—Andy Kimosh, Hungarian, 20 years old. Injured at the Gaylord mine by accidentally dropping a jug of powder, breaking it and wetting the powder. Thinking that the wet powder would not burn, and being warned by others that it would, he sprinkled a handful of powder over his lamp, igniting the damp powder on the floor, and causing a 25-pound keg of powder sitting two feet away to explode, resulting in burning him so that he died from the effects.

FALL OF ROOF.

Injured February 17th; died February 23rd.—Ludwik Wasila, Pole, 23 years old. Injured at the Empire mine. He and his partner had been working on what was known as the 3rd and 4th entry, taking the corners off of one of the breakthroughs to put the road through to the parallel entry. While in the act of preparing a shot, and in a stooping position, a small piece of coal fell striking deceased on the head. There was a slip in the roof coal, and it should have been timbered, as it was plain to be seen. Cross-timber and post should have been put up before the men went to work there.

FALL OF COAL.

Injured March 6th; died March 28th.—Frank Colovitch, Slav, 40 years old. Injured in the Pultney mine in room 14, east entry. The place was narrowed down from eight to five runs on account of bad top. The coal was all loaded out but about three cars. Deceased was kneeling down digging some coal, when some loose coal fell breaking his spinal cord, and injuring him so that he died March 28th. Room was driven in 200 feet, and accident happened 50 feet from last breakthrough.

FALL OF ROOF.

Injured March 29th; died April 18th.—Jno. Human, Slav, 31 years old. Injured at the Johnson mine in room 22, 10th right entry, while taking a side cut out of room, having just fired a tight shot and going back immediately after firing. He had a pick in his hand and was in the act of shearing the shot when the stone fell breaking his back.

FALL OF ROOF.

April 13th.—Mat Zilka, Slav, 37 years old. Killed by a fall of stone in the Knob mine, in rooms one and two on the No. 4th west entry. Number two room was almost cleared, and only one more car to load when the stone fell; there was scarcely any stone in the room, the roof being rough and uneven; breakthrough on left and right 84 feet, and one started from number one room at 60 feet, but not through; mine boss stated that he was in the room that morning and advised deceased to take the stone down or prop it.

MINE CARS.

April 14th.—F. B. McKinney, American, 32 years old. Killed at the Clifford mine. The following is a copy of the coroner's finding:

"After having heard the evidence, examined the body, and considered the facts and circumstances, I do find that the said deceased came to his death by the result of a crushed skull and a broken neck at Dillies Bottom, O., on the 14th day of April, 1909.

"Further, I find that the deceased met his injuries which caused instant death at the bottom of the slope of the Clifford mine of the Ft. Pitt Coal Co., and that said injuries were caused by two empty cars being precipitated from the knuckle at the top of the slope, to the bottom of same, a distance of 540 feet, where these cars struck the deceased, causing the injuries which resulted in death

"Further, I find that on the day of the accident, L. A. Good was employed on the top of the slope, and that it was his duty to see that said cars were coupled before lowering them down the slope, which in this case he neglected to do, and that he negligently and carelessly caused the accident which resulted in the death of said deceased, F. B. McKinney, and that he alone is to blame for the same.

"I, having found that the deceased came to his death by force and violence, and by the negligence and carelessness of one L. A. Good, I forthwith informed W. W. Cowen, prosecuting attorney of said county, of the facts so found, and I appeared before Isaac Newland, justice of the peace, at Martins Ferry, O., and had a warrant issued for the said L. A. Good, charging him with manslaughter in causing the death of F. B. McKinney.

"A. W. DIVEN, Coroner of Belmont County, O."

From the report of District Mine Inspector Lot Jenkins:

"At the instance of Coroner A. W. Diven, L. A. Good was arrested for manslaughter, and at a hearing before Squire Isaac Newland, Martins Ferry, O., Good pleaded not guilty and was defended by two attorneys. After hearing all the witnesses, the squire dismissed the case, claiming that there was no evidence to show that Good wilfully let the cars down without the cable, but that it showed that he was a very careless man, and should not be permitted to work in such a responsible position. The following witnesses testified that Good should have known that cars were all right before starting them down the slope: C. H. Sargent, Mike Wasily, J. D. Craig, C. E. Nice and Lot Jenkins.

"The coroner had consulted the prosecuting attorney and was advised to swear out a warrant, but he did not make his appearance to assist in making a case. The defendant's attorneys in their defense of their client made it appear to the squire that the company was to blame, and it had, in my opinion, a great deal of influence in freeing the man.

"LOT JENKINS, District Mine Inspector."

BLAST OF POWDER.

April 19th.—Calmir Sklarkovsky, Pole, 30 years old. Killed at the Neff No. 1 mine by returning to a shot which he had fired, thinking that it had failed to explode; when close to the shot it exploded blowing the coal in his face, killing him instantly.

FALL OF ROOF.

April 21st.—Slanko Mis, Montenegro, 28 years old. Killed by a fall of stone in the Provident mine, in room No. 7, second west entry; coal was all loaded out but about three cars, with no post under the stone, and at least two-thirds of a crossing of stone up. While loading coal in the car, the stone fell, injuring him so that he died three hours later.

FALL OF ROOF.

May 26th.—Prykop Bury, Pole, 24 years old. Killed by a fall of stone in the Troll No. 1 mine, in room No. 24, thirteenth west entry. Mine was idle the day previous to the accident, and the coal was partly loaded out; a shot was fired on the left side of room with no post set under the crossing of stone, which no doubt became loosened after firing the shot, and having stood idle.

Deceased was killed while they were loading coal, cleaning place to set post. The inspector making the investigation states: "It looks like a case of suicide to work under such a stone without any post to support it."

MINE CARS.

May 29th.—Nick Centra, Italian, 21 years old. Killed in the Carnegie mine, employed as a driver, and while coming onto the number four passway, with four loaded cars, must have fallen off the front end of the car, and was caught between car and post, the wheels of the first car passing over him, killing him instantly.

FALL OF ROOF.

June 3rd.—Alex. Hodeska, Pole, 43 years old. Killed in the Lansing mine by a fall of stone in room No. 12, on 22nd east entry. Deceased had just knocked post out from under a dangerous piece of roof preparatory to taking the stone down, when it fell on him breaking his back, injuring him so he died thirty minutes later.

MINE CARS.

June 7th.—Peter O'Malley, American, 55 years old. Injured while riding on loaded mine cars, in the Whittacre-Glessner mine. Employed as mine boss, and while riding on mine car noticed a lump of coal about to fall off the car back of him, and reached to push it on, and was caught between car and timber overhead in the entryway; died at 12 p. m., the same night at his home in West Virginia.

ELECTRIC WIRES.

June 17th.—Wm. Kidd, American, 20 years old. Electrocutted by coming in contact with a trolley wire while standing on the rail in the Barton mine. The large motor had been off the track at the outside end of third face passway; just after getting it on, Kidd stepped back on empty road and was in a stooping position when the motor was backed up to train of loaded cars. He raised up and the hot wire touched him back of the left ear; he called for help and fell down. He was taken outside but died within five minutes. The wire was outside of rail six inches, three inches from one timber and five inches from the other timber; five feet high from rail hangers, only six feet apart, where he was against the wire; but one timber or eyebeam was lower than the others and wire was in slanting position at that point; the crossover wire in that place was shielded with a board, but the wire with which he came in contact was not a crossover wire, but the one leading to the empty road. Five hundred volts are carried at this mine. The man lived a short time after the charge, and if it had been 250 voltage, he, no doubt, could have been revived.

MINE CARS.

June 24th.—Jno. Lenden, American, 14 years and 6 months. Killed in the Glen mine. Employed as a trapper boy and at the time of the accident was not at his place of duty. Driver in room No. 33 on the 2nd east butt off first west entry, had his car to get caught on one of the posts, causing the mule to stop, and he was having trouble in getting the mule to start up again. The trapper's door was 118 feet away, and he went into the room; just as he was

going to pass the car, the mule started, catching him between the car and the post. Deceased was the son of the stable boss, and being familiar with the mules, no doubt thought he could start the mule.

MINING MACHINE.

Injured July 10th; died July 12th.—Forest M. Sykes, American, 18 years old. Injured in the Knob mine by having his leg caught in a Morgan-Gardner mining machine, from which the shield had been removed. The accident to his limb necessitated amputation, resulting in his death on July 12th. He and his partner, Elmer Wichey, went to work at 5 p. m., and at 7:30 the right hand shield broke off, and they continued to operate the machine without being properly shielded, until five hours later, when the accident happened, which was a direct violation of section 2 of an act passed May 9, 1908. A warrant was sworn out for Elmer Wichey before Squire J. W. Morell, at Bellaire, Ohio, and at the hearing he pleaded guilty to operating a mining machine without a proper shield, a fine and costs being imposed by the court.

FALL OF ROOF.

July 14th.—Peter Smeigel, Pole, 36 years old. Killed in the Virginia Hill mine, by a fall of roof in the 6th west entry; the roof is somewhat tender, requiring cross-timbers in many places. He had loaded his cut-out and was digging holes to put up cross-timbers when the upper roof gave way, pinning him down against the bottom.

GAS EXPLOSION.

July 21st.—Thos. D. Sutherlin, American, 43 years old. Employed as superintendent of the Eleanor mine. Lost his life by entering the mine with an open light shortly after starting the fan, by an explosion of gas. He was the only man working at the mine at the time, the mine having been suspended since the 1st of May. The fan had been idle for some time. He entered the mine for the purpose of giving the pump some attention, and was found about 600 feet from the bottom of the shaft lying crosswise of the track, dead, with his face in the mud and water. The coroner holding the inquest was of the opinion that he died from the force of the explosion and not from being suffocated by the after damp. The mine generates fire damp freely, and had not been examined by a competent person with a safety lamp as required by law. A short time previous to this accident a number of men were severely burned on account of the fire boss permitting them to enter places where he had found gas, and failed to put up caution boards. At the instance of Mr. Lot Jenkins, the District Mine Inspector, the fire boss was brought before a justice of the peace at Bellaire, Ohio, and charged with willful negligence; waiving examination he was bound over to the grand jury of Belmont county, which failed to find a true bill against him, thus again demonstrating the defeat of the mining laws and an almost impossibility of securing a conviction for a plain and deliberate violation.

FALL OF ROOF.

July 30th.—Chas. Beltrum, Italian, 27 years old. Killed in the Empire No. 1 mine by a fall of stone. Deceased was a practical but very careless work-

man. He had been warned by the machine boss not twenty minutes before the accident, and he was making ready to set post when the stone fell, causing his death.

MOTOR TRIP.

August 7th.—Jos. Estegeon, Hungarian, 26 years old. Killed at the Barton mine. Employed as a trip rider, and when the accident occurred was riding on the front end of the trip of five loaded cars which were being pushed into the main entryway by the motor, and the deceased either tried to step off or fell off and was run over by two of the loaded cars, injuring him so that he died in a short time.

FALL OF ROOF.

Injured June 29th; died August 22nd.—Jos. Phillipson, English, 56 years old. Injured at the Neff No. 1 mine, at the face of No. 7 room by a fall of stone, while lifting bottom coal. There was a part of a crossing of stone up with a 3x4 tie under it for a post, but it appeared to have been placed in the wrong location, or another post should have been put up, as the part hanging out over from the post fell, first striking the bottom edgeways and fell over on deceased, striking him on the back breaking it, while he was digging bottom coal loose, resulting in his death August 22nd. There was plenty of loose posts in the room, which was 103 feet deep and 25 feet wide, with breakthrough on right and left, 41 feet from face.

FALL OF ROOF.

Injured September 8th; died September 16th.—Steve Wietk, Pole, 44 years old. Injured in the Black Oak mine, in room No. 12, on the 1st west entry. A shot had been fired in the room and one car loaded out, and while loading the second, a piece of stone 5 feet long and 18 inches wide and one foot thick fell injuring him so that he died on the 16th. It would not have been practical to have posted this stone as it was only 18 inches wide on the front of a fresh cut of coal. Breakthrough on right 36 feet from face, and on the left 21 feet.

FALL OF ROOF.

Injured September 18th; died October 6th.—Frank Protiva, Bohemian, 22 years old. Injured in the Neff No. 1 mine, room 31, on 10th east, by a fall of stone while working at face. Coal was about all loaded out; one post was under the stone, and Protiva was trimming off some coal from face when stone fell. The stone was full of slips and should have been taken down. It was not considered practical to post it.

FALL OF ROOF.

October 11th.—Luther Baker, American, 60 years old. Killed in the Pultney mine. Deceased was an old and practical miner and considered a very careful man. Accident occurred in room 23 on the 8th west entry. He was working out middle shot, when the stone fell. Mr. Baker was working with his son; the room was well timbered, but for some cause no post was placed under this stone.

FALL OF ROOF.

October 19th.—Paul Kohes, Slav, 26 years old. Killed in the Johnsons mine in room No. 13 on 9th east or right entry, by a fall of stone at 3:45 p. m., and died about 12 o'clock. Room was well posted except the stone, which fell. Kohes was shoveling some coal out, getting ready to set a post, the post being too long, but the stone fell before the post was up and caught him.

FALL OF ROOF.

October 22nd.—Jno. Yeckel, German, 25 years old. Killed in the Lorena mine by fall of stone in No. 7 room, 8th right entry. A crossing of coal was almost cleaned, and all the stone was still up with two posts under it. Deceased was shoveling coal out from right hand corner, when one of the posts either broke or was tripped, causing most of the crossing of stone to fall, injuring him so badly that he died a few hours afterwards.

FALL OF ROOF.

November 27th.—Jno. Reckovsky, Pole, 29 years old. Killed at the Lydia mine. He and his partner were working in room No. 8 on 18th entry; one-half of room of coal had been about cleaned out, and two posts had been set up under the stone. The left rib was shot, but it did not blow all the coal down, or was what might be termed "a hanging shot." While loading a car the stone fell, crushing deceased. Room was well posted. Deceased was considered a careful workman. The inspector making the investigation states that it would not have been practical to have posted the stone that fell.

FALL OF ROOF.

November 30th.—Ignos Sarkegi, Hungarian, 35 years old. Killed in the Barton mine by a fall of stone at the face of the No. 9 room, on 18th right entry, on 3rd face. The right rib shot had been fired early in the morning, and he had started to load a car without setting up post under the stone. From the position of his shovel, deceased must have been reaching under the stone, when it gave way. The room was not very well posted, that is, the posts were set too far apart.

FALL OF ROOF.

December 11th.—Andy Pastor, Hungarian, 56 years old. Killed at the Maple Hill mine by a fall of stone while working in room No. 17, 26th right. The coal in the room was almost all cleaned up and Pastor was shoveling coal along the right rib, when a stone fell breaking his neck. It was not considered practical to post the stone, and it should have been taken down, as almost all the other stone was down and cleaned away, and about the last shovel full or two of coal was being taken down under the stone when it fell and killed him.

MINE CARS.

December 15th.—Sylvester Cooley, American, 48 years old. Was employed as machine man in the Clifford mine, and had just gone into the mine for the evening turn at 6:30. He and Frank Daley were about thirty feet back of the door at their machine when Cooley left it and walked to the door and opened it,

and was instantly killed by a loaded trip of eleven mine cars. The report of District Mine Inspector L. D. Devore, November 24th, shows that he had advised the placing of an attendant at this door, which had not been done. This door had been changed since the last visit, and from timber or post, to rib on far side of 3rd east was 6 feet 5 inches; from floor to cross timber was 6 feet; width of car 4 feet 4 inches. Where Cooley was lying from rail to rib was 22 inches; entry at bottom 8 feet, at top 7 feet. Inspector ordered the door set back at once.

MISCELLANEOUS.

December 16th.—Mike Sarantakg, Greek, 40 years old. Killed at the Lorena mine, in room No. 6 on 10th right, which had been newly cut, and shot prepared on right hand rib ready to fire, it is said, 18 inches of powder. He lighted the squib and retired 37 feet along the road; when the blast exploded some of the coal around the mouth of the drill hole flew back and struck deceased on the back of the left ear injuring him so that he died a few hours later. There was a breakthrough just 7 feet further back from the face of the room on the opposite side in which refuge could have been taken with a little effort.

MINE CARS.

December 22nd.—Frank Prodoskie, Pole, 40 years old. Killed at the Lansing mine by a train of cars coming out of the west hill of the mine. The motor had started out with 41 loaded cars and after leaving the passway about 150 feet, the trip separated, the motor going on with 26 cars, the other 15 continuing to follow. There is a grade along the motor line for some distance, otherwise designated as a swale, first going down a small grade, and then going up another. It is not known whether deceased was in a refuge hole when first part of trip passed, and attempted to step out and continue his journey, or whether he attempted to jump on the trip when passing. He was found 10 feet back of the 15 cars, which were running uncontrolled.

CARROLL COUNTY.

MISCELLANEOUS.

December 7th.—Chas. Summers and J. R. Reed, Americans, 38 and 22 years old, were killed in the Robertson mine, a small country domestic mine. Deceased (Reed) requested that he be permitted to mine his winter coal, and having had no experience in mining, he secured the assistance of Chas. Summers, a man of twenty-five years' experience. Between the hours of 4 and 5, E. B. Robertson, finding their dinner pails in the shanty, surmised something wrong, and on entering the mine found both dead a distance of 15 and 20 feet from the face of the coal. The coal is very low (3 feet), and Robertson states that when he left this place last, there was a straight face, and on examination it was found that four shots had been fired on the solid, and no mining done. The room was driven a distance of 40 feet from entry, 20 feet wide, and no breakthrough and practically no current of air passing the neck of the room. The probability is that after the shots were fired they returned and were overcome by carbonic oxide gas.

COLUMBIANA COUNTY.

FALL OF ROOF.

January 21st.—Don Campbell, Swede, 26 years old. Killed by a fall of stone in the Salem mine, at the entrance of No. 6 west butt entry. The management had robbed the pillars in No. 6 within 50 or 60 yards of the main face entry, and the roof was pinching or squeezing a little over the main entry. The mine boss had ordered the drivers not to take the men in further than the passway until he had returned to report whether it was safe or not. The drivers stopped at the passway, but Campbell got out and walked into No. 6 entry to get some tools, and when returning was caught. The entry where he was killed measured from rib to rib 9 feet 4 inches.

MISCELLANEOUS.

September 22nd.—Clem Frederick, American, 38 years old. Met death in the McNab mine; he was sent to the blacksmith shop with a rail and at the elevator gave the usual signal to lower the cage; when cage arrived at top, no one was on, and upon searching at the bottom of the shaft, he was found dead in about one and a half feet of water. Just how the accident happened no one is able to say, as there were no witnesses. The engineer had allowed ample time for getting on the cage, as he was busy at the time oiling the engine. Deceased must have been getting on or off the cage when it started.

FALL OF ROOF.

December 13th.—Thos. Lucas, American, 53 years old. Killed by a fall of stone in the Stackhouse mine, while engaged in robbing pillars. This was a small country mine and had been leased from the owner. The pillar on which he was working was partially removed on the outer end, causing a weakness and doubtless helped to cause the accident; only three posts were standing and from investigation little attention seems to have been paid to the system of taking out pillars.

DUST EXPLOSION FROM BLOWN-OUT SHOT.

December 16th.—Wm. Keen, English, 44 years old, and Geo. Greenawault, American, 31 years old. Employed as shot firers at the Delmore mine, this being their first work as such. It seems to have been the practice in this mine to fire very heavy shots, and on account of its being considered more safe, shot firers were employed. An explosion took place and the men were overcome by gas or impure air.

Note:—A complete account of this accident will be found in this report as investigated by the Chief Inspector, and Inspectors Smith and Morrison.

COSHOCTON COUNTY.

MISCELLANEOUS.

May 6th.—Cadwallder Phillips, an American, 43 years old. Employed at the Warwick mine, was struck on the left side of his head one inch above the

ear by a chunk of slate which slipped from a partially closed chute on the west side of the tippie. The stone is run through this chute to dump cars which are run down the railroad track and dumped. Deceased failed to close the chute.

GUERNSEY COUNTY.

ELECTRIC MOTOR.

January 25th.—Jos. L. Aduddle, American, 15 years old. Employed as a trapper boy at the Ideal mine, and met his death by being caught and crushed by an electric motor while attempting to open a trap door at No. 27 west entry, to allow the motor to pass. A few minutes before the accident he had been found asleep, and he must have again fallen asleep or been deceived by the dim headlight, leading him to believe that the motor was farther away than it was.

FALL OF ROOF.

April 4th.—Samuel Bird, American, 47 years old. Employed as fire boss at the Blue Bell mine and was killed by a fall of slate while in the act of boring a hole in the frame of a trap door to set a hinge, the door being located between 5th and 6th east entries, on the north side of the mine.

MOTOR.

Injured June 22nd; died July 10th.—Aretus Meighen, American, 35 years old. Injured in the Blue Bell mine while riding on the side of the motor with his legs hanging outside; gangrene set in, causing his death on July 10th. On the morning of the accident deceased left his motor running on one button and got off at the door for some purpose and boarded it again, letting his legs hang over towards the east rib of the entry. Seventy-two feet from the door on the curve leading to the parting, which is located on the second west entry, the motor runs within four inches of the rib for a distance of 3 feet. His leg passed through this space bruising the knee above and below for about 5 inches.

FALL OF ROOF.

July 31st.—Richard Diss, killed in the Ohio No. 2 mine, by a fall of slate. An American, 22 years old. He and three others were working on the 24-foot pillar, a tack being left under each end of the mining by the machine men. Evidence was confirmed that the tack had been removed from under the end of the mining before snubbing was completed. A portion of the drawslate over the previous shot had been taken down or fallen down, leaving it over-jetting the mining. Deceased was engaged in snubbing about 6 feet from the west end of the mining, when the slate fell, killing him. There was conflicting evidence at the coroner's inquest as to there being a supply of posts.

FALL OF ROOF.

September 10th.—Jno. Spencer, American, 29 years old, was killed by a fall of slate in the Minnehaha mine while pulling an empty car up the entry, deceased being on the rear end of the motor, the trolley pole pointing west; as they approached the No. 8 west entry they failed to turn the trolley pole

pointing to the rear between 7th and 8th rooms. The trolley wire left the wire and came in contact with the first timber, pushing it forward and dislodging the second timber. Deceased was found with his head and shoulders projecting out between the wheels of the empty car towards the north rib, the car being directly opposite the neck of room No. 8.

MINE CARS.

Injured December 12th, 1906; died September 9th, 1909.—Edward Hinchcliff, American, 23 years old. Injured at the Cleveland mine while riding front end of a loaded car on a two-car trip coming out of No. 5 east entry onto the main entry, north passway. While rounding a curve he missed his balance from some unknown cause and fell between the track. The cars did not leave the track and there was nothing to knock him off. His back was injured and he underwent an operation, removing a portion of the backbone. He died as a result of this injury on September 9th, 1909.

FALL OF ROOF.

October 6th.—Steve Loricer, Hungarian, 34 years old. Killed in the Murray Hill mine by a fall of slate in room No. 12, 6th east entry, while in the act of setting a post nine feet back from the room face. The Inspector making the investigation believes the accident could have been avoided if the advance gob post had been set before the track post was set. The first post west of track was 14 feet back from face, and the gob post on that side was 16 feet back from face.

MINE CARS.

Injured September 26th; died November 5th.—Frederick Hill, American, 27 years old. Injured in the Hartford mine while riding trip on No. 5 entry, and was riding on the front end of the car of empty trip consisting of two trucks pushed ahead of the motor, and when going down No. 51 entry from some unknown cause the front truck jumped the track, and knocked a post out which let the timbers down, striking him across the back, resulting in death November 5th. The mine boss had given orders to the motorman to change the trucks and to always pull them behind the motor. On the day of the accident the mine boss met the motor at the parting leading from main into 51 east. They had started the two trucks in ahead of the motor; he protested against running in this manner, claiming it was dangerous. Deceased stated that they were in a hurry, as they did not wish to lose time by changing trucks, and that they would run carefully down the entry. The mine boss gave in to this appeal, as it was the last trip for that day, and jumped on the truck next to the motor to see that the trip was run carefully. Mr. Hill got on the front truck and laid down on his stomach. At a point about 275 yards from the main entry the front end of the car jumped off the track, and the front truck struck a post and knocked it out, causing the timber and slate to fall, injuring deceased to such an extent that he died November 5th.

MINE CARS.

Injured October 29th; died November 8th.—Harry Dighuck, Slav, injured in the Little Trail Run mine. He and his partner had just secured employment at the mine, arriving after the mine boss had entered the mine. A car stopped at the slope mouth to take tools in, and unnoticed, they jumped into the car

and rode to the bottom contrary to notice. The regular man who hooks the cars on failed to come to work on this day, and the mine boss had gone into the mine to send out another man experienced in the work; a man employed as greaser began hooking on the cars unauthorized. He sent up the car that brought down deceased and his partner, and hooked on another load shortly after the men got out of the empty, which was pulled up to the tippie 300 feet, when it broke loose and caused a wreck, knocking Dighuck down and fracturing his skull, causing death November 8th. Accident could have been averted if the victim had entered the stairway, or if a practical man had hooked the cars, as nothing was broken in the trip to cause the accident. The pin must not have entered the lower side of clevice, allowing it to slip from the drawbar.

HARRISON COUNTY.

FALL OF ROOF.

March 1st.—Joseph Muzyk, Pole, 23 years old. Killed in Roby No. 1 mine in room No. 21, on 13th west entry on the south side of the mine by a fall of soapstone. Center shot was almost loaded out and had one post under the stone about two and one-half feet from the edge of it. The piece of stone outside of the post gave way, breaking off close to the post, striking deceased and killing him instantly.

SUICIDE.

May 22nd.—Jno. Cappella, Pole, 29 years old. Deceased was found in the old works of the Roby No. 1 mine, with a gunshot wound in his head. He had crawled there and buried himself with soapstone. The part of the mine in which he was found had been abandoned for over a year. It was with difficulty that the body was recovered, as it was barely possible in some places to crawl through. This was purely a case of suicide.

Note:—While a detailed synopsis of this accident is given, it is not included in the total number of fatal accidents credited to Harrison county.

POWDER EXPLOSION.

Injured July 22nd; died July 23rd.—Carman Tidding, Italian, 26 years old. Injured in the Roby No. 1 mine, by the explosion of a keg of powder. While filling a half gallon powder can he spilled some powder, upsetting his lamp and exploding almost a full keg of powder. He was removed from the mine to the Wheeling hospital, where he died from his injuries.

HOCKING COUNTY.

FALL OF ROOF.

June 15th.—Jas. Mitchell, American, 48 years old. Killed in the New Pittsburg No. 7 mine by a fall of top coal on the 1st east off 1st south, between Nos. 10 and 11 rooms. Deceased was in the act of cutting stump out, although warned not to do so, but to drill a hole in the top coal and shoot it. This he

did before he shot it, and probably thought he would weaken the shot, when the coal fell, injuring him so that he died thirty minutes later. His leg was broken and a pick handle driven in his neck, severing the jugular vein on the left side of the neck.

MINE CARS.

November 3rd.—Alton Cline, American, 21 years old. Killed in the New Pittsburg No. 7 mine. Employed as a loader, but on the day of the accident, on account of there being no work that day, was employed loading posts in the empty trips, which usually are held in the hoppers until eight or ten cars are gotten, when there is a boy who drops them down to the post pile, where they are taken by the motor. The motor had just taken a trip in the mine, and Mr. Cline, having no empty cars to load, started up to the hopper. He had gotten about half way up when five cars were being dropped down. Cline stood in the center of the track, and was going to step on the bumper, but missed his footing and fell under the trip. He was told by the boy who was dropping the cars not to stand in the track, and his duties did not take him to the hoppers.

FALL OF ROOF.

November 3rd.—Fred Gears, American, 26 years old. Killed in the Jobs No. 2 mine, at the face of room No. 2, 3rd east off 3rd south entry, by fall of coal and a large piece of rooster coal and drawslate, which was posted within six and one-half feet of the face. If they had known there was a slip running over the rooster coal, they could have guarded against it, but it fell without warning. The room was driven 124 feet with one breakthrough on west side of room, and two on east side, but only one being through on the east side. Room was posted as well as the average room.

FALL OF ROOF.

December 3rd.—Samuel Holt, American, 46 years old. Injured by a fall of drawslate in the Nelsonville Coal Co.'s mine, in the West Hill at the face of room No. 6 on the main west entry. The loose coal had been taken down up to the big slate, and finding the top coal loose he stepped back and gave one strike with his pick, when the fall came without warning. This slip ran into the face of the coal and could not be seen.

JACKSON COUNTY.

FALL OF ROOF.

May 25th.—Wm. Pfaff, American, 26 years old. Killed by a fall of stone in the Chapman mine, while drawing pillars. Posts had been set but after firing a shot the coal knocked out the posts. Deceased and partner continued working under the slate without resetting posts. Pfaff was in the act of boring a hole and his partner started to reset post, and while gone for a cap piece slate fell killing Pfaff instantly.

FALL OF ROOF.

August 11th.—Edw. Hazlett, See Kay mine, an American, 43 years old. Deceased and partner were engaged in drawing pillars on the 1st right entry.

The started on the corner of a pillar against which the slate had fallen and fired a shot. While shoveling coal in the car, the slate fell. The slate had all fallen out in the entry to the rock which is 5 feet from the top of the coal and arched to some extent, which made the top heavy. It had been sounded and seemed safe.

MISCELLANEOUS.

October 27th.—Jno. J. Price, Welch, 67 years old. Employed as fire boss in the Domestic mine. Was found dead in the mine near the door between the 1st and 2nd east on north entry at mouth of room No. 27 about 5:45 a. m. No examination had been made of the working places. The coroner in his verdict states that evidence was given which showed that death was due to natural causes, as he had been complaining of severe pain for several hours previous to entering the mine.

Note:—Not a mine accident proper, and not included in the total number of fatal accidents for Jackson county.

FALL OF ROOF.

December 6th.—Harvey Turner, American, 27 years old. Killed in the Walden mine by a fall of slate in a small domestic mine operated by Herbert Trago, in room No. 6 left side of the main entry. Mine was idle on the day of the accident, and when deceased failed to return to his home, a searching party was organized and he was found under a fall of slate. Room was worked in 100 feet from entry, and from the slate fall back to the entry was poorly timbered.

JEFFERSON COUNTY.

FALL OF COAL.

January 4th.—Frank Farekas, Hungarian, 48 years old. Killed in the Plum Run mine. Deceased had fired a breaking-in shot which set the coal down on the bottom, which did not roll over during the day. He got down on his knees to dig the dust from under the coal so that it would roll over, which it did, squeezing him beneath it. There was also a piece of soapstone which came down with the coal. Room No. 16, 4th right entry. Breakthrough within 6 feet of face.

FALL OF ROOF.

January 6th.—Wm. Fargo, Hungarian, 27 years old. Killed in the Plum Run No. 3 mine. Deceased was not employed in this room nor on the same entry. The accident occurred about 8 o'clock p. m., the mine not being in operation on the day of the accident. He had gone into this room where the machine was at work, the men employed on the machine being of his nationality. While making the fifth run, a fall of upper roof occurred, striking and killing him. The machine runner had previously knocked out posts which were set, and barely escaping serious injury himself. Room No. 14, 8th right; two breakthroughs were made, one on each side, 19 feet from face.

FALL OF ROOF.

January 26th.—Jas. Kaubele, Bohemian, 39 years old. Killed by a fall of stone in the U. S. Mine No. 2, in room No. 6, 2nd southwest back entry, in what is known as No. 5 mine. Room was driven 148 feet from entry; two breakthroughs, one on one side and one on the other, and was narrowed down on account of bad roof, and then widened out again. Face of room 49 feet inside of breakthroughs on left side. A shot had been fired on right side of room, and almost loaded out, and it appears he had been shearing on the rib when the stone fell. He was working alone and not found for six or seven hours after the accident.

FALL OF ROOF.

January 29th.—Gaber Pop, Hungarian, 32 years old. Killed in the Conner No. 2 mine while in the act of setting a post, the stone falling causing instant death. Accident occurred in room No. 6, on No. 8 entry.

FALL OF ROOF.

February 27th.—Ellis Varida, Hungarian, 30 years old. Killed in the Conner No. 2 mine in room No. 10, 6th east entry on the south side of the mine. Room was driven 60 feet from entry and fairly well posted. The coal had all been loaded out of this place and stone all taken down except a piece in each corner, and both of these pieces had a post under them. The stone in this room was very rotten and full of slips, and the piece that fell on deceased was all broken up. He was found under the stone by his partner who had left the room for a few minutes. Room was driven 66 feet from entry and fairly well posted.

FALL OF ROOF.

March 29th.—Jos. Pacurech, Pole, 28 years old. Killed in the Jefferson No. 2 mine by a fall of stone in a cut-off driven from No. 19 room, 9th east entry, across the head of the rooms, the entry being driven the distance of 68 feet. Very little stone was in this part of the mine, and in this case the stone had run entirely out, but at the front of the cut it started in again with a feather edge fully 6 inches thick at back of cut, and running across the face was a very smooth slip, so that when the coal was taken out past this slip, there was nothing to support the stone.

FALL OF ROOF.

April 5th.—Jno. Close, American, 40 years old. Killed in the Diamond mine. Deceased was employed as mine foreman and was called to examine a fall between Nos. 4 and 5 butt entries which had been discovered by Jno. Crow, the first man to go into the mine. While on top of the fall to examine the roof a stone weighing a ton fell and injured him so that he died an hour later.

MINE CARS.

June 1st.—Fred Brooks, American, 16 years old. Was working in Dungen mine No. 1 in Nos. 27 and 28 rooms on the 16th east entry with his father, and at the time of the accident was not in his place of employment. He was found dead under a trip of cars, evidently having attempted to board the cars, falling beneath them, causing his death.

MOTOR.

Injured June 22nd; died June 23rd.—August Tarquinne, Italian, 27 years old. Injured in the U. S. No. 4 mine by attempting to jump on the front end of motor and was caught between motor and timbers in the No. 1 drift. The mine was idle on the previous day and they were taking in timber for the entries; five cars were loaded and they were pushing them in ahead of the motor; deceased was on the front car, but Mr. Harper, the mine foreman, told him not to ride there, but to ride the rear end of the motor. He got off and stood between the timbers, 45 feet from the drift mouth, to allow cars to pass; as the last car passed he tried to get on the front end of motor, and as there is only a few inches of clearance between motor and timbers, he got caught and badly crushed, dying the following day. If he had stayed between the timbers until the motor passed he would have been safe.

FALL OF ROOF.

July 20th.—B. P. Finney, an American, 28 years old. Killed in the Walnut Hill No. 2 mine by a fall of stone in room No. 1, which was one of two butt rooms off No. 6 room off No. 11 left entry, mine No. 2. He and his partner were filling a car at the time of the accident, and had their place almost cleaned up when the accident happened, the stone giving way. One post was under it. The fall knocked the post out and in falling he fell with his neck across the post, breaking his neck. He was a careful and practical miner, and had quit working at times with other men on account of their not posting to suit him, and at the time of the accident was working with Robert Patterson, one of the most careful and best posters in the mine.

MINE CARS.

August 13th.—Chas. C. Bethel, American, 38 years old. Killed in the Rush Run No. 2 mine. Deceased was moving a car loaded with stone with mule attached thereto, and while the car was in motion must have dismounted for the purpose of throwing the latches, which were thrown the wrong way, and while doing so was caught. He was the last person to pass over the latches, but for some reason failed to throw them. He was considered a most careful and practical man.

FALL OF ROOF.

September 10th.—Jas. Reed, American, 35 years old. Killed in the Dungen No. 1 mine. Accident was caused by the car which was being pushed ahead of the motor, in which deceased and his partner were riding being derailed, and knocking the timber out which released the slate causing it to fall on him. No bones were broken and he was evidently smothered. These men were working on a machine when the power went off, and they started to ascertain the trouble; meeting a motorman with two cars partly filled with dirt, they proceeded to the place of the difficulty when the accident occurred.

MINE CARS.

September 13th.—Matthew Murray, American, 21 years old. Killed in the Dillon No. 4 mine. Employed as a driver in No. 8 west entry, and started towards the passway with two cars. He had been in the habit of riding on the rear end of the cars, but would pass the cars on entering the passway to unhook

the tail chain, and turn the mule into the neck of No. 3 room, so that the cars would pass it and run in on the passway. He had evidently done this as the mule was found standing in the usual place, and he was found dead under the second car.

FALL OF ROOF.

September 25th.—Enginio Barberis, Italian, 25 years old. Killed in the Jefferson No. 3 mine in room No. 1, a distance of 38 feet from entry, and had been narrowed down on account of a slip and being re-widened, the last cut being 17 feet, as there was a cross-cut opposite this room with track through it; the road was taken out and a cross-cut through from No. 2 at the face and the track laid through. They were loading coal out at the first cut inside this cross-cut. While prying out a piece of coal with a bar, the soapstone swung the post and caught deceased, injuring him so that he died shortly afterwards. One post supported the stone. There was a slip in the stone about 5 feet from the rib, running parallel with the rib, and as the post was not set close to the slip it was of very little support.

FALL OF ROOF.

Injured September 25th; died October 5th.—Wm. Stock, injured in the Goucher mine in room No. 7 on the 5th left entry by a fall of stone. The room could not be examined on account of it, together with several others, and the entry having fallen in since the accident. The room was well supplied with posts, but the testimony adduced at the inquest brought out the fact that none had been used to support the stone, although partner of deceased had made the statement that it did not look safe, but he decided to take out the last car of coal before taking it down.

MISCELLANEOUS.

Injured September 3rd; died October 28th.—Jos. Blohovick, Bohemian, 31 years old. Injured at the Dillon No. 2 mine. He was employed as a machine runner. The machine was out of repair, and being taken to the shop. The driver hooked his mule to the car with the machine behind. Four men got into the car, and the deceased got up on top of the motor of the machine to ride out. About one thousand feet from the drift mouth there is a high place, then three sets of timber which stand 5½ feet above the rail; when going under the first of these his head or back of his neck caught and he fell off. When examined it was found that his back was broken, and he died October 28th. There was plenty of room inside the car, and no reason why he should have ridden on top of the motor.

FALL OF ROOF.

November 17th.—Paul Mychock, Austrian, 22 years old. Killed in the Elizabeth mine by a fall of roof on the passway on the main west entry, which was 13 feet wide and 27 inches between the two tracks and center posted to support the roof, and where height would permit cross bars are used. Seven empty cars were standing on the empty track, and deceased was pulling eight empties in with motor; when he came in on the passway the trip rider cut off the eight empties, and they were pushing the seven empties ahead when the car in front of the motor jumped the track and knocked out two posts, letting

the stone down, 19 feet long, 7 feet wide and 18 inches thick on top of the motor, pinning the motorman under the stone. It required an hour to release him.

FALL OF ROOF.

December 10th.—Jas. Voda, Hungarian, 33 years old. Killed in the Roby No. 4 mine by fall of slate, in room No. 20 on 7th east entry, driven in a distance of 120 feet; good roof and well posted with breakthrough on both sides. The entire cut of coal had been loaded out with the exception of about three cars, one on the right and two on the left with about three feet of stone hanging across the entire face of the room, which was of a strong hard nature, and was probably solid when left the day before. Deceased and partner left a car at the face the previous day partly loaded, and next morning proceeded to finish loading the car without paying any attention to the stone; in a short time the stone fell across the entire face of the room and it was a miracle that both were not killed.

FALL OF ROOF.

December 21st.—Alex. Bora, Hungarian, 33 years old. Killed in the Rush Run No. 1 mine by a fall of stone in room No. 7 on No. 1 west entry. Room was 54 feet from entry, 22 feet wide and in good condition. Deceased was just starting on the first cut on right hand of room to drive across to head off No. 6 room when the stone fell. This man was placed on narrow work on account of being considered practical. The stone which fell was mostly cut off with a slip and firing shot caused it to fall.

LAWRENCE COUNTY.

FALL OF ROOF.

March 26th.—Earl Richardson, American, 19 years old. Killed in the Richardson mine. He was employed in his father's mine, and was alone in the mine when the accident happened. There is a drawslate overlaying the coal about four inches thick, and as a rule it was taken down as soon as coal was removed, which the deceased failed to do, leaving a piece hanging back 3 feet wide and 6 feet long, which fell on him, pinning his body to the bottom face downward. Coroner was of the opinion that if some one had been there to render assistance his life might have been saved.

MEIGS COUNTY.

FALL OF ROOF.

February 26th.—Homer Roush, American, 21 years old. Killed in the Rolling Mill mine by a fall of slate on the 5th west entry opposite room No. 39, 65 feet from face of entry. Top had been taken down to the neck of room No. 39 and posted from there to face of entry with posts three to four feet apart, seeming an almost impossibility for it to fall.

FALL OF ROOF.

Injured March 23rd; died March 24th.—Jno. Bowman, African, 60 years old. Injured in Pomeroy Coal Co.'s mine by a fall of slate in room No. 6 on 1st west entry, 150 feet in from entry and 17 feet 2 inches wide. A post had been set under the slate, which deceased removed as it was in the way, picked down what loose top he could and proceeded to cut under it when it fell. Orders had been given by the District Inspector on previous visits that the slate must come down to the rock and he had also been warned by the track layers that morning that the slate was loose, and to either post it or take it down. This is the same room in which C. H. Williams was killed in September of the previous year.

FALL OF ROOF.

November 15th.—Madison Graham, American, 38 years old. Killed in the Hudson Salisbury mine by a fall of slate at face of 2nd south entry off 6th west. Place had been shot down and one car loaded, and started loading the second car, and when about one-third loaded a piece of slate fell, striking him on the head and fracturing his skull. Had the place been examined after shooting this piece of slate would undoubtedly have been found.

MUSKINGUM COUNTY.**FALL OF ROOF.**

September 9th.—Jno. Miles, American, 33 years old. Killed at Fisher's mine by a fall of drawslate. Room was 20 feet wide at face and was 13 feet long and 6 feet wide. There was no timbering done, the miners not thinking it necessary to timber the roof. There were two posts of suitable length laying near the face and no timbering done within 46 feet of the face.

MINE CARS.

October 26th.—Fred Smith, American, 20 years old. Killed at the Granger mine. Deceased was employed as weigh boss. When last seen alive he was in the act of dumping a car of coal. The mine is equipped with an incline about 300 feet long, where loaded cars coming down pull empty cars up. At the time of the accident six cars of coal were coming down and six empty ones going up, when in some way the hitching pin between the first and second car came loose and the five empties came down the incline and either struck Mr. Smith or he jumped to get out of the way and fell. He was found on the O. & L. K. R. R. track 30 feet below, dead.

NOBLE COUNTY.**FALL OF ROOF.**

October 18th.—Jno. VanDyne, American, 26 years old. Killed in the Marion mine in room No. 3, going north from No. 1 main west entry which was driven

18 feet wide; two rows of posts were set on the west side of track and three rows on the east side of the track, spacing them about two feet apart in all directions. Deceased had just finished drilling a short hole on the rib with a post drill and removed boxing and stepped towards the room center near the room face when an oblong pot, terminating at the room face about 6 feet from the east rib extending in a southeasterly direction the distance of four feet, fell and caught deceased. His death resulted four hours later.

MOTOR.

August 3rd.—Michael Trayon, Slav, 29 years old. Killed in the Laura mine by stepping in front of a motor which was running in the rear of another motor at 6:45 a. m., when the miners were proceeding to their working places. Orders were given to run slow and keep close together so as to be seen by pedestrians. At about 1,900 feet from shaft bottom motor overtook deceased and several others; they stepped aside for the head motor, and as soon as it passed, deceased, unknown to his companions, stepped in the track and was struck by the second motor. Aside from regular safety holes the entry was wide enough and strictly clean for a hundred yards for safe passage except for 20 feet, where he was struck.

OTTAWA COUNTY.

EXPLOSION OF POWDER.

Injured May 7th; died May 8th.—Jno. Demo, Austrian, 50 years old. Injured in No. 1 mine. He was employed as a day man and on the day of the accident was cleaning up some stone in the back entry which follows the main entry. Two men were making a breakthrough from the back entry over to the main entry. The men working in the breakthrough had prepared three shots and it was quitting time. They notified the deceased to go out; he started out and the men who were going to fire their shots went to the battery about 125 feet from the breakthrough, and being satisfied that everything was all right, they fired. For some unknown reason the deceased had turned and was going back to his working place. When he was opposite the breakthrough the shot went off, injuring him so that he died the following day.

PERRY COUNTY.

MISCELLANEOUS.

April 29th.—Geo. M. Johnson, Welsh, 34 years old. Killed at the Johnson No. 9 mine. The deceased and brother were working on the tipple dropping in the loaded cars of coal, when the tipple gave way precipitating them both 40

feet to the ground. He was caught under one of the loaded cars, injuring him to such an extent that he died three hours later.

FALL OF ROOF.

July 20th.—Chas. L. Young, American, 23 years old. Killed at the Dixie mine by a fall of stone about 300 feet in the mine while starting to work riding in motor trip. The rock that fell was 12 feet long, 6 feet wide and 10 feet thick, striking him on the left side of the face and breaking his neck. Workmen who witnessed the accident stated that none of them knew the rock was dangerous at this place. There had been a passway at this place and there was a row of posts along the side of the track; the slate fall tripped two of them. Entry 13 feet wide at this place.

MINE CAR.

October 23rd.—Ernest L. Inman, American, 21 years, killed at the Greeley No. 1 mine by falling from the front end of a loaded car of coal and being run over. Evidence developed that he was in the act of releasing the mule from the car while riding on the front of car and became overbalanced and fell. The passway where the accident occurred was 300 feet long, and 75 feet from gathering end and 20 feet wide.

MISCELLANEOUS.

December 1st.—Marshal Marcum, American, 52 years old. Employed in the Sunday Creek No. 268 mine, in room No. 1 off 14th west entry. Evidence developed that he was loading a car of coal and had sat down against a post 20 feet from the face of the room, and 34 feet from breakthrough, and when spoken to by the man with whom he was working, he fell over dead. Room was 54 feet past the first breakthrough and 2,400 cubic feet of air was passing through the breakthrough, and 19,200 cubic feet passing into the entry.

Note:—Not a mine accident proper; consequently not included in total number of fatal accidents for Perry county.

PORTAGE COUNTY.

ELECTROCUTED.

March 18th.—Evan Richards, American, 54 years old. Found dead in the Hutson mine, lying on the wires. Deceased was employed in rooms 10 and 11; the wires were brought up No. 10 room inside the first row of road posts and were in good condition. From an examination it appeared that deceased crawled through a small breakthrough from No. 11 room to go into No. 10 room to fire his shot. His tamping bar was found close to the wires; it was very low, the gob being close to the roof. It was only a short distance to go back to room No. 10 where the wires were perfectly safe. The potential at this mine is 550 volts, alternating current.

SCIOTO COUNTY.

FALL OF ROOF.

March 24th.—Edw. Bessler, American, 51 years old. Killed at South Webster Clay No. 2 mine by a fall of slate. This was an old mine abandoned for several years, only two men being employed. The top at this place is very shallow and tender and full of seams, making it very dangerous and difficult to hold. Deceased and partner were well aware of the nature of the roof, and the seams in the top, and that blocks of slate would drop without warning.

STARK COUNTY.

FALL OF ROOF.

Injured January 9th; died January 22nd.—Angelo Roberts, Italian, 45 years old. Injured at Taggart's No. 3 mine by a fall of stone in room No. 2 in entry No. 1, north side of the mine. The room was driven 45 yards from entry and was 30 feet wide. Deceased had fired a shot about 4 yards from left hand rib and was barring it off and had commenced to wedge it down when the coal released a stone resulting from a slip in the roof. A number of posts were laying on each side of the room.

MISCELLANEOUS.

December 27th.—Jacob Kraft, American, 42 years old. Was employed as driver and cager in the Massillon City mine, and was in the act of removing an empty from cage. When a few feet from cage he dropped down and died instantly. Death was due to natural causes.

Note:—Not a mine accident proper; and not included in the total number of fatal accidents for Stark county.

TUSCARAWAS COUNTY.

FALL OF ROOF.

Injured October 28th; died April 2nd.—Camrelli Hevare, Hungarian, 30 years old. Injured in Mullin No. 1 mine. Deceased had just started a first cut off the left side of entry to rob pillars and had cut under about 3 feet when the stone fell. No posts had been set in this case.

FALL OF ROOF.

April 23rd.—Jno. Elwood, American, 48 years old. Killed in the Indian Hill mine by a fall of stone in No. 12 right entry. Deceased with two others was sent in to shoot roof to make height for the mules at a low place; a shot had been fired in the stone just inside room No. 4 in the entry and after resting about fifteen minutes returned to work. It appears Mr. Elwood had gone over the shot of stone either to locate another hole or to examine the roof when the stone fell, killing him instantly.

feet to the ground. He was caught under one of the
to such an extent that he died three hours later.

FALL OF F

July 20th.—Chas. L. Young, A
mine by a fall of stone about 30
in motor trip. The rock that
thick, striking him on the le
men who witnessed the ac
dangerous at this place.
was a row of posts alr
them. Entry 13 feet

FALL OF ROOF.

August 15th.—Yelowats Dusan, Syrian, 40 years
No. 4 mine by a fall of rock in neck of room off 4th
dropped out from a slip running almost di
about 5 or 6 feet from the face; at the time of
it would prove fatal.

FALL OF ROOF.

October

No. 1 mine
over. E
the car
passw
ering

August 26th; died September 3rd.—L. M. Beatty, American, 55
years old. Injured in the East Goshen No. 2 mine by a fall of roof in room
No. 10, 10th east entry, while oiling machine. The room was 20 feet wide. De-
ceased had been in conversation with a man who was taking up a collection
and who had been warned by Mr. Beatty not to sit under that part of the roof,
that it was dangerous. The accident was not considered a dangerous one at
the time. Deceased had not worked in the mines for four or five years, but
had gone in the mine again to work with his son and had only worked one
month when the accident happened. The deceased had two posts laying ready
to place under defective parts of the roof, but said to his son that he would oil
the mining machine before he placed the posts, thus losing his life by delaying
to post at the proper time, having full knowledge of the imminent danger. The
deceased was a thorough, practical miner.

FALL OF ROOF.

December 24th.—Wm. Fellers, American, 77 years old, and Christ Vogley,
American, 54 years old. Killed in the Seward English mine, a small country
mine, about 150 feet from the mouth of the mine, while engaged in turning off
a place at right side of entry which was only 5 feet wide. The place which
was being turned was started about 6 feet wide, and was in a distance of 14
feet, when a stone dropped out of the center, killing both instantly. They
were the only men employed in the mine and both were considered practical
miners, and from all appearances this was an unforeseen accident.

VINTON COUNTY.

FALL OF ROOF.

August 2nd.—Ben Yates, American 42 years old. Killed at the Alma Lime
No. 51 mine by fall of roof in No. 3 room on the 1st east entry, weighing about
150 pounds, which knocked him down. Before assistance could be gotten there
was a large fall 25 feet long, 15 feet wide and 4½ feet thick, covering him up.

It required from 1 o'clock until 10 at night to recover the body. Deceased was considered a careful man and his judgment could be relied on when working in shale.

WAYNE COUNTY.

FALL OF ROOF.

September 23rd.—Richard Edwards, Welsh, 61 years old. Killed in No. 21 mine by a fall of stone in room No. 3 on No. 1 south side entry. He was in the act of barring off a standing shot when the accident happened. The nearest post to stone was 7 feet from face. The place previous to the accident appeared perfectly safe.

LIST OF SERIOUS ACCIDENTS OCCURRING IN THE MINES OF THE STATE FROM JANUARY 1, 1909, TO DECEMBER 31, 1909, INCLUSIVE.
ATHENS COUNTY.

| Date. | Name. | Nationality | Age. | Character of Injury. | Cause of Accident. | Name of Mine. |
|----------|--------------------|-------------|------|---|--|----------------------|
| Jan. 1 | Jno. Hiltan | American | 39 | Foot injured | Removing steel rails off cage | No. 211. |
| Jan. 13 | Chas. Pearce | American | 41 | Thumb caught | In gearing of motor engine | Luhrig Nos. 1 and 2. |
| Jan. 15 | Clarence Luman | American | 15 | Right arm broken | Removing wheel from track | Luhrig. |
| Jan. 23 | H. McKinley | American | 35 | Leg cut | Unloading mining machine | Hisylvania. |
| Feb. 18 | Jno. Rhoriek | American | 30 | Ankle and foot injured | Caught by car (car dropper) | Luhrig. |
| Feb. 19 | Tony Madiskilla | Pole | 34 | Crushed through hips | Fall of bone coal | No. 24. |
| Feb. 20 | Ifeury Moser | American | 40 | Four ribs broken and leg inj. | Working at a standing shot | No. 211. |
| Mar. 9 | Albert Moore | American | 17 | Face and arms burned | Explosion of powder, tamping with iron tamper and needle | No. 31. |
| Mar. 19 | Mosley Gaskel | American | 48 | Right leg broken | Fall of coal | Luhrig. |
| Mar. 24 | Edw. Courtway | American | 23 | Foot run over | By mining machine | Kittaning. |
| April 5 | Wm. Kirkendal | American | 23 | Right foot mashed | Riding on rear end of motor | No. 209. |
| April 28 | Harry Baird | American | 18 | Both legs injured | Caught between motor and timber | No. 211. |
| April 29 | Sam Stevenson | American | 16 | Injured seriously | By being caught between mine car and rib | No. 211. |
| May 5 | Jas. Davis | American | 61 | Back injured | Fall of coal | No. 254. |
| May 7 | Ora Pack | American | 17 | Left leg injured | By motor jumping track | No. 201. |
| May 28 | Smiley Brooks | American | 19 | Seriously injured | Slipping and falling in front of mine cars | No. 201. |
| June 1 | Andrew Hall | American | 22 | Two ribs broken | Riding on cars, and slate fell, striking him | C. & H. C. & I. |
| June 2 | Stanley Pomecinski | German | 29 | Head cut and right leg bruised | By fall of slate | Doanville No. 1. |
| June 3 | Gabriel Reeves | Hungarian | 50 | Two ribs broken | Fall of slate | C. & H. C. & I. |
| June 15 | Dan Hook | American | 28 | Ankle sprained and sequestered through body | | |
| June 16 | Jno. Doshier | American | 43 | Three ribs broken | | |
| June 18 | Jerome Lensford | American | 52 | Foot injured | Working a standing shot, coal caught foot | No. 286. |
| June 19 | Fred Walters | American | 23 | Collar bone broken | By motor trip; caught between cars | Kittaning. |
| June 23 | Pat Chamberlain | American | 50 | Left leg and right arm broken | Fall of soapstone | Maple Hill. |

INSPECTOR OF MINES

| | | | | | | |
|----------|-----------------|-----------|----|--|--|---------------------|
| July 27 | August Osney | American | 59 | Abdomen crushed | Fall of roof | Doanville No. 1. |
| Aug. 16 | Thos. Sherman | American | 24 | Right leg injured | Falling in front of loaded mine cars | Luhrig. |
| Aug. 23 | Jno. Murray | American | 30 | Right leg injured | Caught between frame and shield of mining machine | No. 209. |
| Sept. 2 | G. H. Shanner | American | 30 | Nose broken | Fall of drawslate | Doanville No. 1A. |
| Sept. 2 | Wilmer Baird | American | 28 | Side of face bruised and lip cut | Fall of drawslate | Doanville No. 1A. |
| Sept. 2 | Albert Pasfical | American | 35 | Ankle injured | Getting under mine cars | Jumper No. 2. |
| Sept. 13 | P. D. Hawkins | American | 38 | Foot injured | Slipping and falling in front of gathering locomotive | No. 209. |
| Sept. 16 | Chas. Leffler | American | 36 | Right foot injured | Crushed by fall of coal | Kittaning. |
| Sept. 22 | Geo. Lattimore | American | 30 | Bone in foot broken | Riding on front end of rope trip; ran into a fall of slate | C. & H. C. & I. |
| Sept. 23 | H. V. Fernan | American | 37 | Right leg injured | Removing jack from mining machine | Luhrig No. 1 and 2. |
| Sept. 25 | Jas. Lang | American | 32 | Bone in right foot broken | Fall of slate from gob | C. & H. C. & I. |
| Sept. 28 | Steve Kruiser | American | 50 | Shoulder dislocated | Fall of bone coal | No. 267. |
| Oct. 2 | Raymon Mulpas | Belgian | 43 | Right leg broken | Fall of slate | No. 24. |
| Oct. 4 | Wm. Thece | American | 23 | Right leg broken | Falling in front of mine cars | Luhrig No. 1 and 2. |
| Oct. 6 | Jno. Pettit | American | 29 | Foot injured | Riding on mine cars | Elm Rock. |
| Oct. 14 | Floyd Millks | American | 26 | Right hand mashed | Spragging a machine | Luhrig. |
| Oct. 18 | Jas. Hartman | American | 40 | Foot crushed | Pulling coal down with a bar | No. 204. |
| Nov. 1 | Geo. Luther | American | 34 | Leg and hip injured | Caught by projecting timbers | College Hill. |
| Nov. 2 | Harvey Pennell | American | 52 | Leg broken | Fall of roof | No. 204. |
| Nov. 7 | Chas. Cox | American | 29 | Right finger on left hand cut off | Erecting a motor | No. 24. |
| Nov. 8 | Jas. Long | American | 35 | Chest and back injured | Fall of slate | C. & H. C. & I. |
| Nov. 11 | H. B. Moodgerd | American | 26 | Right foot run over | By mine cars | Luhrig. |
| Nov. 12 | Jas. Hines | American | 39 | Left leg broken | Collision of mine cars and mining machine | No. 204. |
| Nov. 16 | Wm. Anderson | American | 33 | Arm broken | Caught between mine cars | Jumper No. 2. |
| Nov. 18 | Geo. Somers | American | 28 | Right leg broken | Caught in shive wheel while pulling empty trip | No. 34 (Shaeffer). |
| Nov. 18 | Manna Fisk | American | 28 | Right leg broken | Fall slate | No. 204. |
| Nov. 19 | Tony Clark | American | 23 | Right foot run over | By mining machine | Doanville No. 1. |
| Dec. 8 | Chas. Ardis | Hungarian | 36 | Left arm and two ribs fractured | By fall of slate | No. 211. |
| Dec. 17 | Theo. Nagle | American | 36 | Left hip and ribs injured | Fall of coal | Fall |
| Dec. 21 | Walter Jones | American | 21 | Right hand broken and right leg out of place | Fell in front of | |
| Dec. 30 | Henry Rathburn | American | 40 | Left leg broken | | |
| Dec. 31 | Harry Booth | American | 31 | Back probably | | |

LIST OF SERIOUS ACCIDENTS—Continued—BELMONT COUNTY.

| Date. | Name. | Nationality | Age. | Character of Injury. | Cause of Accident. | Name of Mine. |
|----------|------------------|-------------|------|---------------------------------|---|---------------------|
| Jan. 6 | Zeno Maloniok | Pole | 26 | Leg broken | Fall of stone | Kirkwood. |
| Jan. 9 | F. DePoe | Italian | 17 | Shoulder dislocated | Caught between car and rib | Florence. |
| Jan. 12 | Taylor Corbett | American | 42 | Back injured | Fall of stone | Rail & River No. 2. |
| Jan. 25 | Jas. Ferguson | American | 28 | Shoulder bone broken | Caught between mine door and car | Pipe Creek. |
| Jan. 27 | Sam Sawlasko | Slav | 28 | Shoulder and collar bone broken | Caught between mine car and rib | Barton. |
| Jan. 29 | Wm. Randell | American | 45 | Breast injured | Fall of stone | Maple Hill. |
| Feb. 2 | Wm. Duncan | American | 22 | Hip bone broken | Fall of stone | Rail & River. |
| Feb. 9 | Felix Gorkey | Pole | 23 | Face and hands burned | Explosion of powder | Gaylord. |
| Feb. 23 | Alex Balls | Hungarian | 48 | Leg injured | Fall of soapstone; amputation necessary | Taggart. |
| Feb. 25 | Martin Fissersky | Pole | 27 | Hands and face injured | Lamp dropped into powder | Black Diamond. |
| Mar. 16 | Steve Smarick | Hungarian | 43 | Left hand injured | Caught between mine cars | Maple Hill. |
| Mar. 16 | Steward Smith | American | 50 | Ribs squeezed | Ran into open switch | Knob. |
| Mar. 16 | Anthony Ponce | Foreigner | 37 | Head and hand injured | Fall of stone | Wheeling Creek. |
| Mar. 23 | Ridley Robinson | American | 60 | Leg broken | Fall of stone | Glen. |
| Mar. 25 | Mike Butcher | Pole | 29 | Leg broken | Fall of slate | Crescent No. 3. |
| Mar. 29 | Jno. Human | Pole | 32 | Back broken | Fall of slate | Pipe Creek. |
| Mar. 31 | Jno. Salgado | Hungarian | 28 | Finger mashed | Caught between mine cars | Barton. |
| April 5 | Geo. Commetus | Greek | .. | Bone in left arm broken | Fall of stone | Kirkwood. |
| April 9 | Jake Nadroski | Pole | 42 | Leg broken | Fall of stone | Rail & River No. 2. |
| April 13 | Matt Zilka | Slav | 37 | Both legs broken | Fall of stone | Knob. |
| April 17 | Mike Popp | Hungarian | 30 | Right thigh and ankle injured | Fall of stone | Barton. |
| April 19 | W. Souders | American | 23 | Hands and face burned | Explosion of gas; went into mine before gas was cleaned out | Eleanor. |
| April 19 | E. Travis | American | 24 | Hands and face burned | Explosion of gas | Eleanor. |
| April 19 | Harry Travis | American | 45 | Hands and face burned | Explosion of gas | Eleanor. |
| April 19 | Sanford Rounds | American | 26 | Hands and face burned | Explosion of gas | Eleanor. |
| April 19 | Thos. Goddard | American | 26 | Hands and face burned | Explosion of gas | Eleanor. |
| April 19 | Jno. Kolovoski | Slav | 25 | Hands and face burned | Explosion of gas | Eleanor. |
| April 19 | Peter Cudjoe | Austrian | 28 | Leg broken | Explosion of gas | St. Clair. |
| April 19 | Hugh Thomas | American | 51 | Leg broken | Fall of stone | Pipe Creek. |
| April 19 | Jasper Angelo | American | .. | Leg broken | Wall of drawlute | .. |

| | | | | | | |
|----------|-------------------------|----------------|----|--|--|---------------------|
| April 30 | Jno. Lapis..... | Italian..... | 36 | Leg broken..... | Fall of soapstone..... | Rail & River No. 2. |
| May 7 | Martin Kertuti..... | Austrian..... | 28 | Leg broken..... | Stepping in front of mine car..... | Wheeling Creek. |
| May 8 | E. Gubernots..... | Pole..... | 25 | Hip dislocated..... | Fall of slate..... | Florence. |
| May 13 | Kalvin Rendall..... | American..... | 47 | Foot injured..... | Fall of coal..... | Knob. |
| May 18 | Steve Howarth..... | Hungarian..... | 25 | Right foot injured..... | Fall of coal..... | Maple Hill. |
| May 24 | Vladic Seovick..... | Pole..... | 21 | Back injured..... | Fall of soapstone..... | Crescent No. 3. |
| May 25 | Jno. Darnley..... | American..... | 18 | Finger cut off..... | Coupling mine cars..... | Knob. |
| May 27 | Jno. Gocsick..... | Slav..... | 22 | Hips bruised..... | Fall of slate..... | Florence. |
| May 29 | Joe Maysaw..... | Hungarian..... | 24 | Fingers injured..... | Coupling mine cars..... | Florence. |
| June 3 | Robert Lashley..... | American..... | 43 | Back and side injured..... | Caught by motor trip..... | Pittsburg-Belmont |
| June 4 | Andy Boreck..... | Slav..... | 40 | Left leg injured..... | Prying down coal..... | No. 1. |
| June 4 | Jos. Baker..... | American..... | 30 | Foot injured..... | Caught in mining machine..... | Maple Hill. |
| June 6 | Jos. Lanasi..... | Italian..... | 28 | Hips squeezed..... | Caught between mine car and rib..... | Knob. |
| June 29 | Jos. Phillipson..... | American..... | 59 | Back injured..... | Fall of slate..... | Pittsburg-Belmont |
| June 29 | Robert Ault..... | American..... | 42 | Leg injured..... | Stepping between mine cars..... | No. 1. |
| July 8 | Jno. Lucas..... | Hungarian..... | 26 | Back injured..... | Fall of stone..... | Big Run. |
| July 14 | Jno. Schucht, Jr..... | American..... | 47 | Knee injured..... | Caught by mine car..... | Florence. |
| July 19 | Jno. Costain..... | American..... | 26 | Foot injured..... | Fall of stone..... | Laughlin. |
| July 21 | Chas. McIntyre..... | American..... | 37 | Foot injured..... | Fall of stone..... | Gaylord. |
| July 21 | Frank Saffie..... | American..... | 29 | Right shoulder dislocated and three ribs broken..... | Thrown under car..... | Knob. |
| July 26 | Chris Singerman..... | American..... | 48 | Bowels injured..... | Caught between mine car and post..... | Glen. |
| July 30 | Marie Beltrando..... | Italian..... | 27 | Breast injured..... | Fall of stone..... | Kirkwood. |
| Aug. 12 | E. J. Remy..... | Russian..... | 33 | Toes caught..... | By mining machine..... | Empire. |
| Aug. 12 | Pard Dusac..... | Hungarian..... | 23 | Leg broken..... | By machine jumping and striking him..... | Taggart. |
| Aug. 14 | Geo. Martin..... | Hungarian..... | 29 | Hips bruised..... | Fall of coal and stone..... | Crescent No. 2. |
| Aug. 17 | Warren King..... | American..... | 27 | Hand injured..... | Caught between roof and loaded mine car..... | Glen Run. |
| Aug. 23 | Andy Szboran..... | Slav..... | 23 | Toe cut..... | Fall of stone..... | Maple Hill. |
| Sept. 1 | Martin Leis..... | German..... | 60 | Ankle broken..... | Fall of stone..... | Glen Run. |
| Sept. 2 | Earl Kiner..... | American..... | 21 | Ankle bone broken..... | Stepping off car..... | Knob. |
| Sept. 3 | Servera Debedofski..... | Pole..... | 34 | Hip dislocated..... | Fall of stone..... | Ft. Pitt. |
| Sept. 15 | Frank Havyer..... | American..... | 34 | Right leg injured..... | By mine car; motor trip broke..... | St. Clair. |
| Sept. 18 | Wm. Kennedy..... | American..... | 58 | Knee injured..... | Stone fell on coal and rolled over on him..... | Florence. |
| Sept. 23 | Frank Busda..... | Bohemian..... | 58 | Left leg broken..... | Fall of slate..... | Big Run. |
| | | | | | | Carnegie. |

LIST OF SERIOUS ACCIDENTS—Continued—BELMONT COUNTY—Concluded

| Date. | Name. | Nationality | Age. | Character of Injury. | Cause of Accident. | Name of Mine. |
|----------|-----------------|-------------|------|------------------------|--|-----------------------|
| Sept. 24 | Wm. Jeffrey | American | 20 | Leg broken | Fall of slate | Glen. |
| Sept. 28 | Ross Kennedy | American | 27 | Hips injured | Caught between loaded car and mule | Big Run. |
| Sept. 29 | Frank Kovaliki | Pole | 21 | Foot injured | Slipped in front of mine car | Empire. |
| Sept. 29 | Geo. May | Austrian | 33 | Arm broken | Caught between mine cars | Empire. |
| Oct. 1 | Tony Solonka | Austrian | 36 | Leg broken | Fall of stone | Virginia Hill. |
| Oct. 2 | Geo. Garnis | American | 32 | Leg broken | Fall of slate | Big Run. |
| Oct. 9 | Mike Kurtzka | Pole | 22 | Foot injured | Slipped and fell under mine car | Crescent No. 3. |
| Oct. 9 | Stenway Lokong | Pole | 38 | Leg broken | Fall of stone | Black Diamond. |
| Oct. 12 | Mike Sonovich | Slav | 34 | Back injured | Fall of stone | Rail & River No. 2. |
| Oct. 14 | Geo. Pedicord | American | 47 | Back injured | Fall of stone | Rail and River No. 2. |
| Oct. 20 | Vinice Bush | Hungarian | 27 | Hips squeezed | Caught between mine car and rib | Florence. |
| Oct. 29 | Paul Zandody | Slav | 32 | Right leg broken | Fall of stone | Maple Hill. |
| Nov. 3 | Amos Brown | American | 50 | Ankle badly sprained | Attempting to control mine cars | Media. |
| Nov. 4 | Jno. Colbrook | Pole | 28 | Right leg fractured | Fall of coal | St. Clair. |
| Nov. 5 | Phil Strasser | German | 52 | Leg injured | Caught between wagons | Schick. |
| Nov. 8 | Kraust | Slav | 44 | Two ribs broken | Fall of coal while loading | St. Clair. |
| Nov. 12 | Thos. Murray | Negro | 42 | Two fingers taken off | Riding on top of mining machine | Gaylord No. 1. |
| Nov. 26 | Jno. Silla | American | 38 | Hip dislocated | Fall of slate | Troll No. 1. |
| Dec. 1 | Ralph Robinson | American | 38 | Right foot injured | Moving mining machine | Rail & River No. 6. |
| Dec. 2 | Klee Baker | American | 27 | Hips wrenched | Coupling mine cars | Knob. |
| Dec. 7 | Steve Roachneck | Hungarian | 17 | Leg broken | Fall of stone | Florence. |
| Dec. 9 | Sumoke Barre | Italian | 26 | Hips injured | Fall of slate | Glen. |
| Dec. 10 | Wm. Baker | German | 50 | Back injured | Fall of stone | Laughlin. |
| Dec. 10 | Mike Hudgbar | German | 25 | Arms and wrist injured | Fall of slate | Troll No. 2. |
| Dec. 11 | Jno. Nagyavis | Italian | 32 | Hips injured | Fall of slate | Glen. |
| Dec. 17 | Tony Leone | Italian | 15 | Skull fractured | Fall of coal | Tunnel. |
| Dec. 20 | Andrew Barks | Pole | 35 | Right leg lacerated | Coming in contact with mining machine; leg amputated | Provident. |
| Dec. 20 | Geo. Visnic | Slav | 27 | Right leg lacerated | Falling in front of motor | Provident. |
| Dec. 24 | Jno. Strick | Pole | 23 | Leg and foot injured | Fall slate | Troll No. 2. |
| Dec. 27 | Charence Currie | American | 43 | Foot and back injured | Fall slate | Cochran. |
| Dec. 30 | Charles Vanpel | American | 22 | Leg broken | Fall slate | Dellora. |
| Dec. 30 | Tony Muscat | Italian | 20 | Left leg injured | Fall coal and stone | Rail and River. |

CARROLL COUNTY.

| | | | | | | |
|---------|-------------|----------|----|-------------------------|--------------------------|-------------|
| Feb. 15 | Jas. Joseph | American | 63 | Two ribs broken | Run over by mine car | Magnolia. |
| Feb. 18 | Frank Roda | American | 45 | Finger cut off | Caught in mining machine | Magnolia. |
| June 3 | W. A. Mysse | American | 30 | Leg injured | Caught between mine cars | Strip Vein. |
| July 29 | Ralph Rizzo | Italian | | Hip and stomach injured | Fall roof | No. 6. |

COLUMBIANA COUNTY.

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|---------|-----------------|----------|----|------------------------------|---|----------------|
| Feb. 13 | Wm. Bridge | American | 20 | Two ribs fractured | Holding mine car after spragging had broken | Old Slope. |
| June 5 | Jas. Oats | American | 52 | Breast and shoulders injured | Fall slate | Old Slope. |
| June 15 | Jos. Hartshorne | American | 54 | Chest and back injured | Crushed by weight pan striking him | Old Slope. |
| June 25 | Jno. P. Jones | American | 40 | Rib broken | Detaching rope on tippie | New Salisbury. |
| June 29 | Jno. Baker | American | 48 | Toe taken off | Chopping post, ax slipped | Old Slope. |
| Oct. 16 | Frank Wynots | Bohemian | 20 | Collar bone broken | Pulled under mine car | Somers No. 2. |
| Nov. 2 | Jno. Bailey | American | 32 | Bone in ankle broken | Fall of roof | Salem. |
| Nov. 4 | Lon Rassor | American | 35 | Face and hands burned | Keg of powder exploded by gas | Salem. |
| Dec. 7 | Chas. Hulton | American | | Back and hips injured | by taking it up to face of entry | Prospect Hill. |
| | | | | | Fall drawslate | |

COSHOCKTON COUNTY.

| | | | | | | |
|---------|-----------------|----------|----|-----------------------------|----------------------------------|-------------------|
| Jan. 23 | Jno. Jones | American | 31 | Ribs broken and leg injured | Fall drawslate | Barnes. |
| Feb. 17 | Richard Hawkins | American | 31 | Finger cut off | Caught between mine car and post | Davis. |
| July 7 | Alex. Laird | American | 26 | Fingers injured | Lump of coal falling off car | Morgan Run No. 3. |
| July 22 | Daniel McCartan | American | 27 | Back injured | Fall roof | Morgan Run No. 3. |

LIST OF SERIOUS ACCIDENTS—Continued—GUERNSEY COUNTY.

| Date. | Name. | Nationality. | Age. | Character of Injury. | Cause of Accident. | Name of Mine. |
|----------|-----------------|--------------|------|-------------------------|-----------------------------------|--------------------|
| Jan. 7 | Jno. Urwin | American | 36 | Left arm broken | Caught between mine car and mule. | Trail Run No. 2. |
| Jan. 9 | Robert Blackson | American | 31 | Left arm broken | Mine cars jumping track | Ideal. |
| Jan. 9 | Thos. Birch | American | 33 | Left leg injured | Mine cars jumping track | Ideal. |
| Jan. 9 | Julius Durant | French | 32 | Two ribs broken | Mine cars jumping track | Ideal. |
| Jan. 19 | Thos. Badly | American | 22 | Leg broken | Collision of mine cars | Ohio No. 2. |
| Jan. 26 | Samuel Clough | American | 38 | Two fingers cut off | Caught in chain of mining machine | Trail Run No. 2. |
| Jan. 28 | Herman Miller | American | 20 | Back injured | Fall slate | Little Kate No. 2. |
| Feb. 7 | Elmer Hague | American | 44 | Leg broken | Fall slate | Little Kate No. 2. |
| Feb. 15 | Wm. Davis | American | 28 | Bone in wrist broken | Caught between mine car and mule | Ideal. |
| Feb. 22 | Paul Williams | American | 50 | Leg broken | Fall slate | Puritan. |
| Mar. 13 | Geo. Kulless | Slav | 25 | Collar bone broken | Cutting mine cars | Little Kate No. 2. |
| Mar. 20 | Sam Robinson | American | 44 | Finger mashed | By mine cars | Kings. |
| Mar. 22 | Jno. Lotso | Slav | 32 | Ankle fractured | Fall stone | Ideal. |
| Mar. 22 | Joe Tolbis | Slav | 35 | Shoulder injured | Working under loose coal | Trail Run No. 2. |
| Mar. 22 | Julius Gompers | Slav | 46 | Leg broken | Fall slate | Forsythe. |
| Mar. 26 | Joe Hoffman | American | 50 | Foot injured | Fall slate | Trail Run No. 2. |
| Mar. 27 | Jno. Dyor | Slav | 31 | Leg broken | Fall coal | Blue Bell. |
| April 2 | Clyde King | American | 19 | Right leg injured | Fall slate | Puritan. |
| April 3 | Patrick McElroy | American | | Foot injured | Fall slate | Trail Run No. 2. |
| April 16 | Earl Potts | American | 25 | Three fingers taken off | Caught in crank of engine | Little Kate. |
| April 27 | Jno. Daugherty | American | 20 | End of thumb taken off | Moving mining machine | Midway. |
| April 29 | Paul Lackney | Slav | 21 | Leg broken | Fall slate | Ohio No. 2. |
| May 4 | W. A. Alderman | American | 37 | Left foot mashed | Collision of motors | Forsythe. |
| May 14 | Jno. Odean | French | 34 | Left leg injured | Trip jumping track | Kings. |
| May 17 | Jas. Wussell | American | 32 | Knee injured | Fall slate | Detroit. |
| May 28 | Richard Edmunds | Welsh | 25 | Seriously injured | Caught between motors | Kings. |
| June 1 | Jas. Paul | American | 13 | Leg broken | Fall roof | Puritan. |
| June 1 | Pearl Saults | American | 33 | Right leg broken | Fall slate | Blue Bell. |
| June 2 | Jno. Harly | American | 51 | Ankle fractured | Fall coal | Blue Bell. |
| June 2 | Jno. Harly | Slav | 22 | Foot fractured | Fall drawslate | Blue Bell. |
| June 9 | Sharon Melgren | American | 35 | Left leg mashed | Caught between rib and motor. | Blue Bell. |

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|---------|-------------------|-----------|----|--------------------------------|---|--------------------|
| June 28 | Wm. Evans | American | 44 | Left arm broken | Fall coal | Puritan. |
| July 9 | Wm. Cron. | American | 30 | Collar bone fractured | Caught between cross timber and wagon | Walhonding. |
| July 17 | Gus Taylor | American | 27 | Ankle sprained | Fall slate | Kings. |
| July 21 | Joe Kavula | Slav | 28 | Back and hips injured | Fall slate | Ideal. |
| July 24 | Jack Demfee | American | 29 | Breast and shoulders squeezed | Fall slate | Kings. |
| July 24 | Fred Griffin | American | 34 | Shoulder dislocated | Fall slate | Hartford. |
| Aug. 13 | Russell C. Howard | American | 22 | Hands and face burned | Fall of slate caused by an explosion of gas | Trail Run No. 2. |
| Aug. 13 | Thos. Smith | American | 30 | Hands and face burned | Fall of slate caused by an explosion of gas | Trail Run No. 2. |
| Aug. 14 | E. Wolf | American | 37 | Finger broken | Lump of coal falling down shaft. | Kings. |
| Oct. 6 | Steve Loney | Hungarian | 35 | Head and shoulders injured | Fall of slate | Murray Hill. |
| Oct. 9 | Wm. Cross | American | 25 | Leg cut off | Stepping on motor | Puritan. |
| Oct. 18 | Steve Slovanski | Slav | 27 | Right leg fractured | Fall slate | Minnehaha. |
| Oct. 19 | Wm. Norwick | Russian | 35 | Right thigh injured | Premature shot | Minnehaha. |
| Oct. 20 | Levi Phillips | American | 35 | Right arm fractured | Riding on front end of motor | Minnehaha. |
| Oct. 22 | David Ellis | American | 26 | Head cut and leg crushed | Caught between loaded cars and post | Little Kate No. 2. |
| Oct. 22 | Joe Torey | Irish | 31 | Foot and ankle injured | Car colliding with mule | Ideal. |
| Oct. 25 | Jno. Salome | Slav | 22 | Face, hands and arms burned | Explosion of keg of powder; filling cartridge with open light on head | Little Kate No. 2 |
| Oct. 25 | Geo. Kulish | Slav | 26 | Face, hands and arms burned | Explosion of keg of powder; filling cartridge with open light on head | Little Kate No. 2. |
| Oct. 25 | Tony Lenor | Italian | 32 | Face, hands and arms burned | Explosion of keg of powder; filling cartridge with open light on head | Little Kate No. 2. |
| Oct. 25 | Wm. Mason | American | 17 | Hips squeezed | Uncoupling mine cars | Little Kate No. 2. |
| Nov. 8 | Henry Bergin | French | 34 | Hips and back injured | Fall coal | Black Top. |
| Nov. 9 | Wm. Needs | American | 22 | Leg injured | Caught between bumpers of mine cars | Trail Run No. 1. |
| Nov. 9 | Sherman E. Dearth | American | 20 | Large toe of left foot cut off | Mine car jumping track | Puritan. |
| Nov. 18 | Jas. Brown | American | 31 | Right leg injured | Fall slate | Kings. |
| Nov. 20 | Thos. Watkinson | American | 34 | Right foot injured | Fall coal | Hartford. |
| Nov. 22 | Fred Clark | American | 41 | Hand mashed | Coal falling from railroad cars | Minnehaha. |
| Nov. 23 | Urban Fremont | French | 40 | Fingers on left hand injured | Fall slate | Forsythe. |
| Nov. 23 | Jas. Carney | American | 34 | Two ribs broken | Fall slate | Ideal. |
| v. 26 | | | 34 | Right knee injured | Fall slate | Walhonding No. 2. |
| 27 | | Pole | 42 | | | Minnehaha. |

LIST OF SERIOUS ACCIDENTS—Continued—GUERNSEY COUNTY—Concluded.

| Date. | Name. | Nationality | Age. | Character of Injury. | Cause of Accident. | Name of Mine. |
|---------|----------------|-------------|------|----------------------------------|--|------------------|
| Nov. 29 | Arcno Bonchey | French | 41 | Left leg broken | Fall coal | Kings. |
| Dec. 1 | Lewis Whorton | American | 44 | Head cut | Fall slate | Forsythe. |
| Dec. 3 | J. B. Atkins | American | 56 | Hips and side injured | Stepping in front of empty mine cars | West Branch. |
| Dec. 10 | Thos. Dent | American | 34 | Left hand injured | Mine cars jumping track | Trail Run No. 2. |
| Dec. 11 | Henry Brown | American | 28 | Hips injured | Fall coal | Detroit. |
| Dec. 14 | Vince Brady | American | 48 | Small bone in foot broken | Fall coal | Forsythe. |
| Dec. 15 | Clyde Graham | American | 27 | Left leg broken | Fall coal | Little Kate. |
| Dec. 17 | Mike Princhot | Slav | 45 | Back injured | Fall coal | Trail Run No. 1. |
| Dec. 21 | Daniel Stump | American | 38 | Back injured | Fall slate | Puritan. |
| Dec. 21 | E. M. Mitchell | American | 48 | Ankle wrenched and knee sprained | Slipping under mine car | Hartford. |
| Dec. 29 | Jas. Moss | American | 42 | Two ribs broken | Car jumping track, and knocked post out. | Klondyke. |
| Dec. 30 | Jno. W. Norman | American | 29 | Hips sprained and ankle cut | Thrown on mining machine | Little Kate. |
| Dec. 30 | Andy Yamish | Slav | 38 | Leg crushed | Caught between mine cars | Minnehaha. |
| Dec. 31 | Tom Reynolds | American | 28 | Index finger mashed | Placing mine car on track | Midway. |

HARRISON COUNTY.

| Date. | Name. | Nationality | Age. | Character of Injury. | Cause of Accident. | Name of Mine. |
|---------|---------------|-------------|------|-----------------------|----------------------------|---------------|
| Jan. 19 | Andy Albert | Magyar | 26 | Hips injured | Coupling mine cars | Roby No. 1. |
| Mar. 13 | Frank Barchie | Pole | 40 | Head and legs injured | Fall soapstone | Roby No. 1. |
| May 1 | Adam Botgbeek | Pole | 27 | Thigh broken | Fall soapstone | Roby No. 1. |
| May 4 | Win. Thomas | American | 54 | Fore finger taken off | Tightening packing on pump | Roby No. 1. |
| May 12 | Jno. Silder | Pole | 24 | | | |

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|---------|---------------------|------------|----|----------------------------|---|-----------|
| Nov. 22 | Jno. Fatsie | Hungarian | 17 | First finger cut off | Holding latches and run over by car | Majestic. |
| Nov. 29 | Stany Stanowich ... | Pole | 30 | Head and leg injured | Fall of stone on entry | Majestic. |

HOCKING COUNTY.

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|----------|-----------------------|-----------|----|---|------------------------------------|----------------------|
| Jan. 8 | Geo. Bailey | American | 45 | Contusion of ankle, and side injury | Fall roof | Black Diamond. |
| Jan. 9 | David Powers | American | 32 | Arm broken | Mine cars colliding with door .. | Nelsonville Coal Co. |
| Jan. 25 | Andy Namet | Hungarian | 21 | Leg broken | Fall drawslate | Jobs. |
| Mar. 3 | Sylvester Davis | American | 36 | Left leg broken | Fall slate | Royal. |
| Mar. 19 | Pearly Bond | American | 18 | Right thumb injured | Coupling mine cars | Black Diamond. |
| Sept. 22 | Jno. McManaway | American | 26 | Foot injured | Falling in front of motor | No. 207. |
| Oct. 15 | Harry Moore | American | 31 | Side and jaw injured | Lump of coal falling down shaft .. | Eclipse. |
| Nov. 11 | Frank Toneyhill | American | 32 | Chin injured | Struck by mine car | No. 207. |
| Nov. 23 | West Sanburn | American | 28 | Cheek bone broken | Flying shot 78 ft. from room | New Pitts. 2½. |
| Dec. 20 | Markis Williamson .. | American | 39 | Foot injured | By mining machine | New Pitts. No. 1. |

JACKSON COUNTY.

| | | | | | | |
|----------|----------------------|-------------|----|-----------------------------------|-------------------------------|----------------------|
| Jan. 5 | Levi Ewing | American | 40 | Hand injured | Fall slate | Price. |
| April 24 | Howard Noble | American | 16 | Leg broken | Slipping on rail | Wellston Colliery. |
| Sept. 15 | Harmon Myers | German .. | 55 | Three ribs broken and face cut .. | Fall slate | Emma. |
| Sept. 27 | Wm. Richardson | American | 48 | Hips injured | Fall slate | Star. |
| Oct. 8 | Wm. Hunter | American | 22 | Collar bone broken | Thrown from mule | Domestic. |
| Oct. 15 | Frank Walker | American | 17 | Leg broken | Falling off mine car | Superior No. 3. |
| Oct. 27 | Thos. Miller | American | 60 | Spine and ribs injured | Fall slate | Tom Corwin. |
| Nov. 1 | Wm. Davis | Welsh | 40 | Three ribs broken | Fall slate | Wellston Colliery. |
| Nov. 4 | Lewis Oiler | American | 38 | Foot injured | Fall of coal | Jones & Morgan No. 3 |
| Nov. 12 | Henry Howe | American | 65 | Ankle injured | Fall slate | Star. |
| Nov. 19 | Norman Smith | American | 26 | Back broken | Fall slate | Superior No. 4. |
| Nov. 29 | Burt Murphy | American | 19 | Thigh broken | Fall roof | Cochran. |
| Nov. 29 | Wesley Bennett | American | 27 | Chest injured | Fall roof | Cochran. |
| Dec. 8 | Wm. Maerker | American | 26 | Hand cut | Caught in electric pump | Springfield. |
| Dec. 28 | Jno. Elkins | American | 42 | Shoulders and rib injured | Fall rock | Superior No. 1. |

LIST OF SERIOUS ACCIDENTS—Continued—JEFFERSON COUNTY.

| etc. | Name. | Nationality | Age. | Character of Injury. | Cause of Accident. | Name of Mine. |
|----------|---------------------|-------------|------|-----------------------------|--|--------------------|
| Jan. 6 | Wm. Carroll | American | 18 | Seriously injured | Ry mine cars | Zerbe. |
| Jan. 9 | Andy Strohle | American | 50 | Toe injured | Fall coal | Rice. |
| Jan. 12 | Dominick Ferini | Italian | 22 | Head injured | Ry mine cars | Plum Run. |
| Jan. 14 | Frank Capron | Slav | 33 | Tight foot injured | Fall drawslate | Connor No. 1. |
| Jan. 21 | Andrew Moliski | Pole | 23 | Left leg broken | Fall roof coal | Edgar No. 2. |
| Jan. 23 | Jno. Dutton | American | 31 | Right hip injured | Caught by mine car | Jefferson No. 1. |
| Feb. 4 | Tony Dasuo | Italian | 21 | Collar bone broken | Caught between car and rib | Jefferson No. 2. |
| Feb. 5 | Pet Chioth | Italian | 35 | Left leg broken | Fall stone | Jefferson No. 1. |
| Feb. 19 | Adam | Pole | 19 | Back injured | Fall stone | Connor No. 2. |
| Mar. 9 | Chas. Rani | Slav | 17 | Bone in ankle broken | Ry mine cars | Crow Hollow. |
| Mar. 9 | Columbus McLaughlin | American | 30 | Foot injured | Moving pipe line | Walnut Hill No. 1. |
| Mar. 10 | Sum Hoover | American | 59 | Back injured | Small slip in roof | Rush Run No. 1. |
| Mar. 24 | Jno. Soliday | Hungarian | 32 | Shoulder injured | Fall slate. | Rush Run No. 1. |
| Mar. 26 | Acc McGrew | American | 42 | Ankle and head cut | Fall slate. | Goucher. |
| Mar. 28 | Stany Dolinsky | Pole | .. | Seriously injured | Caught between wagons; ran into fall | Connor No. 1. |
| April 20 | Andy Hinckinsko | Italian | 27 | Shoulder bone broken | Coupling mine cars | Jefferson No. 1. |
| April 28 | Robert Beard | American | 28 | Thumb partially cut off | Raising mining machine | Dillon No. 4. |
| April 28 | Adam | Pole | 38 | Back and leg injured | Fall stone | Jefferson No. 1. |
| May 3 | Pete Sanvag | Belgian | 48 | Rib broken | Fall soapstone | Connor No. 1. |
| May 13 | Faustini Vagha | Italian | 33 | Finger taken off | Caught by stone | Piney Fork. |
| May 13 | Guseppi Srafi | Italian | 35 | Back and hip bruised | Fall of roof coal and stone | Piney Fork. |
| May 14 | Jno. Sednaky | Pole | 22 | Left leg broken | Falling under trip of two cars | No. 3. |
| May 14 | Jerry Yellik | Bohemian | 38 | Back and hip injured | Fall stone | Bradley. |
| May 21 | Joe Jose | Pole | 28 | Foot broken and head cut | Fall drawslate. | Rush Run No. 1. |
| May 25 | Stoney Garpwie | Pole | 23 | Left leg broken | Fall drawslate | No. 3. |
| June 4 | Jno. Stopka | Pole | 35 | Hip squeezed | Caught between car and rib, car jumped track | Dungen. |
| June 10 | Geo. Swartz | American | 45 | Hip injured | Fall stone | Jean. |
| June 10 | Chas. Buck | American | 49 | Face, hands and body burned | Squib fell on car; explosion of powder | Stratton F. B. |
| June 15 | Jno. Connelly | Italian | 42 | Leg broken | Fall slate. | U. S. No. 3. |
| June 15 | Jas. Scotch | Slav | 35 | Back and legs injured | Fall slate. | Ellisabeth. |
| June 19 | Jas. Scotch | Italian | 21 | Left foot cut off | Stepped in front of trip | Jefferson No. 3. |

| | | | | | | |
|----------|-------------------|-----------|----|-------------------------------------|--|---------------------|
| June 28 | Adam Wagner | American | 27 | Arm broken | Kicked by mule | Zerbe. |
| June 28 | Andy Sticks | Bohemian | 40 | Foot injured | Fall stone | Edgar No. 1. |
| | | Hungarian | 23 | Hand mashed and finger broken | Raising mining machine | Dillon No. 4. |
| June 28 | Frank Salinka | Russian | 38 | Finger taken off | Removing stone | Jefferson No. 1. |
| July 2 | Nicholas Benentta | Italian | 30 | Left hand cut | Fall stone | Jefferson No. 1. |
| July 7 | Paul Getsic | Pole | 55 | Wrist and hips injured | Fall roof | Rush Run No. 1. |
| July 9 | Joe Cotta | Italian | 34 | Left leg broken | Fall stone | Dillon No. 2. |
| July 19 | Thos. Urlick | Slav | 34 | Back and left ankle bruised | Fall stone | Jefferson No. 1. |
| July 20 | Steve Santo | Hungarian | 32 | Left leg broken (amputated) | Fall stone | Connor. |
| July 31 | Walter Uscabger | Hungarian | 34 | Back and shoulders injured | Fall stone | Edgar No. 2. |
| Aug. 7 | Chini Pursons | Italian | 27 | Hand bruised | Loading coal | Jefferson No. 2. |
| Aug. 10 | Egness Dobrinaki | Pole | 36 | Left leg bruised | Fall stone | Connor No. 2. |
| Sept. 3 | Joe Blahovith | Bohemian | 31 | Back injured | Riding on mine cars; caught between timbers | Dillon No. 2. |
| Sept. 4 | Steve Demiellos | Hungarian | 35 | Right leg fractured | Fall slate | Plum Run. |
| Sept. 4 | Quindino Santacea | Italian | 22 | Back injured | Fall stone | Jefferson No. 1. |
| Sept. 13 | Paul Bacha | Pole | 37 | Left leg injured | Fall stone | Jefferson No. 1. |
| Sept. 14 | Albert Duftack | Pole | 32 | Index finger on right hand injured. | Fall stone | Jefferson No. 2. |
| Sept. 16 | Tony Swasi | Italian | 40 | Back and side injured | Fall slate | Jefferson No. 2. |
| Sept. 28 | Julius Pasque | Belgian | 47 | Seriously injured | Fall roof | Jefferson No. 3. |
| Oct. 14 | Mike Dupke | Belgian | 33 | Ankle broken | Ran into by trip of cars | Dillon No. 2. |
| Oct. 25 | R. Burboek | Italian | 30 | Hip injured | Fall stone | Rush Run No. 2. |
| Oct. 26 | | Hungarian | 37 | Shoulder and back injured | Fall stone | Portland. |
| Oct. 29 | Alfonce Ronone | Italian | 40 | Left leg broken | Fall drawslate | Plum Run. |
| Nov. 1 | Ernest Shriver | American | 28 | Left leg injured | Fall stone | Jefferson No. 1. |
| Nov. 4 | Mike Schutte | Hungarian | 23 | Left leg broken | Fall stone | U. S. Bradley. |
| Nov. 16 | Matis Kiss | Slav | 34 | Left wrist out of place | Fall roof | Rush Run No. 2. |
| Nov. 17 | Steve Myer | Hungarian | 38 | Back and legs injured | Fall roof | Jefferson No. 1. |
| Nov. 23 | Jno. Hortstick | Pole | 38 | Rib broken | Fall soapstone | Roby No. 2. |
| Nov. 29 | Jim Cortiss | Italian | 24 | Finger injured | Tip of cars | Roby No. 2. |
| | | | | | Thrown between cars by brake breaking | |
| Dec. 2 | Joe Krislyak | Slav | 41 | Back and right hip injured | Fall coal | Jefferson No. 2. |
| Dec. 7 | Henry Barbia | Italian | 28 | Head cut and left arm broken | Fall stone | Jefferson No. 1. |
| Dec. 13 | Peter Grobosky | Pole | 44 | Left shoulder broken | Fall soapstone | Jefferson No. 1. |
| Dec. 14 | Henry Price | English | 42 | Head and hands injured | Tamping powder, cartridge broke which fired the shot | U. S. No. 7 and 8. |
| Dec. 15 | Ruri Sosua | Pole | 36 | Left leg broken | Fall soapstone | Goucher. |
| | | | | | | U. S. Nos. 7 and 8. |

LIST OF SERIOUS ACCIDENTS—Continued—JEFFERSON COUNTY—Concluded.

| Date | Name. | Nationality | Age. | Character of Injury. | Cause of Accident. | Name of Mine. |
|------------------|-----------------------|-------------|------|--|------------------------------|---------------|
| Dec. 16 | Wm. Weales..... | English... | 52 | Leg slightly crushed..... | Fall coal..... | Elizabeth. |
| Dec. 21 | Giovani Porena..... | Italian... | 24 | Foot injured..... | Fall slate..... | U. S. No. 2. |
| LAWRENCE COUNTY. | | | | | | |
| July 29 | Ed Rawlins..... | American | 34 | Leg broken..... | Fall of shale..... | York. |
| Aug. 24 | L. E. Aberts..... | American | 43 | Right hand injured..... | Caught between two cars..... | Irish Hollow. |
| Nov. 9 | Geo. Lamberts..... | American | 30 | Head and face injured..... | Fall slate..... | Fienup No. 5. |
| MAHONING COUNTY. | | | | | | |
| Nov. 25 | J. C. Miller..... | American | 55 | Two ribs broken and spine injured..... | Coal coming down chute..... | Fisk |
| MEIGS COUNTY. | | | | | | |
| April 5 | Leon L. Gruesser..... | American | 25 | Back injured..... | Fall roof, loading car..... | Rolling Mill. |
| July 24 | Roy Heins..... | American | 18 | Arm broken..... | Loading coal..... | Peacock. |
| Aug. 12 | Chas. Bartels..... | American | 35 | Rib broken..... | Fall coal and slate..... | Peacock. |
| Sept. 9 | Chas. Benty..... | American | 30 | Collar bone and one rib broken..... | Fall coal..... | Peacock. |
| Oct. 12 | Louis Clark..... | American | 30 | Leg broken..... | Thrown off water wagon..... | Peacock. |
| Nov. 4 | Osmar Shiver..... | American | 24 | Breast injured..... | Fall slate..... | Charter Oak. |
| Dec. 23 | Earl Clark..... | American | 22 | Arm broken..... | Falling from loaded car..... | Hobson. |

| | | | | | | |
|----------|--------------------|-----------|----|---------------------------------------|--|---------|
| Feb. 23 | Wm. Gray..... | American | 23 | Shoulder injured..... | Caught between roof and car... | Tropic. |
| Feb. 26 | Roy Masterson..... | American | 17 | Foot injured..... | Caught under mine car and frog. | Rose. |
| Mar. 19 | Geo. Brewer..... | American | 50 | Ribs and ankle broken..... | Fall bone coal..... | Rose. |
| Apr. 27 | Jno. Barenik..... | Slav | 23 | Back injured..... | Fall slate..... | Tropic. |
| June 3 | Everett Trout..... | American | 19 | Arm broken..... | Caught between car and rib..... | Tropic. |
| July 30 | Robert Hale..... | American | 28 | Hip injured..... | Caught between empty and loaded car..... | Tropic. |
| Sept. 28 | Wm. Ervin..... | American | 22 | Finger cut off..... | Caught between bumpers of mine cars..... | Rose. |
| Oct. 4 | Jas. Fleming..... | Scotch... | 51 | Shoulder dislocated and head cut..... | Kicked by mule..... | Tropic. |

MUSKINGUM COUNTY.

| | | | | | | |
|----------|--------------------|----------|----|------------------------|--|--------------|
| Jan. 28 | Perley Harrop..... | American | 35 | Leg broken..... | Fall rock..... | Granger. |
| Aug. 6 | Chas. Murford..... | American | 40 | Finger cut off..... | Caught between frame of mining machine and shovel..... | Elk. |
| Sept. 25 | Albert Maddox..... | American | 34 | Leg cut..... | Driver ran into another trip..... | Elk. |
| Oct. 5 | Jas. McCannie..... | American | 39 | Right leg injured..... | Fall bone coal..... | Walnut Hill. |

NOBLE COUNTY.

| | | | | | | |
|---------|----------------------|-----------|----|--------------------------------------|---------------------------|-------------|
| Feb. 5 | Thos. Wentworth..... | American | 38 | Face, hands and neck burned..... | Pocket of gas..... | Golden Rod. |
| Feb. 19 | M. S. Moore..... | American | 36 | Knee dislocated..... | Fall slate..... | Laura. |
| Feb. 19 | Jno. Crajh..... | Slav..... | 26 | Foot crushed and hip dislocated..... | Fall slate..... | Laura. |
| June 7 | Walter Bond..... | American | 34 | Ankle bone fractured..... | Fall slate..... | Noble. |
| July 1 | Martin Brumish..... | Slav..... | 46 | Right leg broken..... | Fall slate..... | Noble. |
| July 5 | Mike Hadach..... | Slav..... | 30 | Right foot injured..... | Run over by mine car..... | Noble. |
| Aug. 2 | Pruik Harabas..... | Slav..... | 38 | Right leg injured..... | Fall coal..... | Noble. |
| Sept. 8 | Mike Badner..... | Slav..... | 44 | Head and shoulder injured..... | Fall of coal..... | Laura. |

LIST OF SERIOUS ACCIDENTS—Continued—NOBLE COUNTY—Concluded.

| Date. | Name. | Nationality | Age. | Character of Injury. | Cause of Accident. | Name of Mine. |
|----------|--------------|-------------|------|-----------------------------------|--|---------------|
| Sept. 9 | Andy Sholtz | Pole | 50 | Leg broken and shoulder fractured | Fall coal | Laura. |
| Sept. 19 | Mike Polinka | Slav | 22 | Foot injured | Unloading car of slate | Noble. |
| Nov. 11 | Mike Zalanik | Slav | 35 | Leg injured | Caught between mine cars | Laura. |
| Nov. 23 | Wm. West | American | 32 | Right hand cut | Spreading machine truck | Golden Rod. |
| Dec. 4 | Wm. Wheeler | American | 42 | Left leg broken | Caught between mine cars | Golden Rod. |
| Dec. 13 | Wm. Wise | American | 47 | Right leg broken | Mine car | Noble. |
| Dec. 28 | Chas. Bond | American | 27 | Right foot injured | Caught between empty mine car and mining machine | Golden Rod. |

OTTAWA COUNTY (Gypsum Mines).

| | | | | | | |
|----------|---------------|-----------|----|----------------------------|--|-----------------|
| Mar. 18 | Chas. Haine | American | 27 | Right leg broken | Run over by mine car | West. |
| May 25 | P. Killman | Slav | 42 | Right hand injured | Caught between chain and post | East. |
| May 28 | Jas. Vincens | Italian | 23 | Back dislocated | Caught on timber coming up on cage | American No. 1. |
| May 31 | Frank Sloan | American | 31 | Left foot injured | Caught between car bumpers | West No. 3. |
| Aug. 4 | Steve Stetco | Slav | 23 | Face and body injured | Cartridge exploded while drilling hole | West No. 1. |
| Sept. 30 | Steve Hlovace | Hungarian | 39 | Head and right leg injured | Caught on feed bar of drill | West No. 3. |

PERRY COUNTY.

| | | | | | | |
|---------|-----------------|-----------|----|-------------------------------|-----------------------|--------------------|
| Jan. 1 | E. W. Stevenson | American | 45 | Foot broken | Fall coal | No. 15. |
| Jan. 9 | Wm. McConnell | American | 28 | Leg injured | Moving mining machine | Simons No. 5. |
| Jan. 13 | Jas. Shula | Foreigner | 20 | Left ankle dislocated | Loading coal in car | Sunday Creek No. 9 |
| Jan. 19 | Wm. Hardy | American | 21 | Head cut and shoulder injured | Fall coal | No. 302 |
| Jan. 29 | A. W. Brown | American | 45 | Ribs and shoulders injured | Fall bone coal | |

| | | | | | | |
|----------|-----------------|----------|----|--------------------------------------|---------------------------------|------------------------|
| May 25 | Hiram Campbell | American | 63 | Four ribs broken | Fall slate | Central. |
| July 23 | Jno. Smith | American | 29 | Foot injured | Fall slate | Crescent. |
| Aug. 17 | Jas. Lanning | American | 24 | Leg injured | Fall slate and coal | C. & H. C. & I. No. 3. |
| Sept. 28 | Arthur Shepherd | American | 35 | Bone in leg broken | Dumping car of refuse | Keystone No. 1. |
| Oct. 2 | Samuel Gross | American | 22 | Ankle and hips injured | Fall loose slate | Greeley No. 3. |
| Nov. 30 | Thos. Slatzer | American | 46 | Thumb on right hand almost amputated | Setting bits in machine | C. & H. C. & I. No. 3. |
| Dec. 8 | W. E. White | American | 51 | Back and side injured | Fall bone coal | Greeley No. 2. |
| Dec. 13 | Jno. Cass, Jr. | American | 21 | Leg and ankle sprained | Lifting mining machine on track | Central. |
| Dec. 18 | Louis Brown | American | 55 | Back injured and ribs broken | Fall bone coal | Bear Run No. 1. |

PORTAGE COUNTY.

| | | | | | | |
|----------|-----------------|----------|----|------------------------|---|---------------|
| Mar. 15 | Edw. Miller | American | 62 | Face and hands injured | Explosion of gas | Hutson No. 8. |
| Sept. 21 | Geo. Redman | American | 56 | Foot injured | Piece of coal rolling and striking foot | Hutson No. 8. |
| Sept. 21 | Samuel Crawford | American | 28 | Hip dislocated | Fell between cars | Mullin. |
| Oct. 12 | Jno. Mazey | Welsh | 48 | Two ribs fractured | Fall coal | Hutson No. 4. |

SCIOTO COUNTY.

| | | | | | | |
|---------|-------------|----------|----|---------------|------------|-------------|
| Feb. 18 | Jacob Moore | American | 19 | Ankle injured | Fall slate | Sugar Camp. |
|---------|-------------|----------|----|---------------|------------|-------------|

STARK COUNTY.

| | | | | | | |
|---------|-------------------|----------|----|--------------------|--------------------|------------------------|
| Feb. 3 | C. Doxey | American | 38 | Left thigh broken | Fall rock | Pocock. |
| June 15 | J. E. Baumgartner | American | 29 | Right foot injured | Pump falling on it | Mass. C. M. Co. No. 12 |

LIST OF SERIOUS ACCIDENTS—Concluded—STARK COUNTY—Concluded.

| Date. | Name. | Nationality | Age. | Character of Injury. | Cause of Accident. | Name of Mine. |
|---------|---------------------|-------------|------|--|--|----------------|
| June 17 | Geo. Roman | Bohemian | 21 | Thumb and first finger taken off | Tampering with dynamite cap .. | McGinty. |
| July 29 | Frank Greaser | American | 31 | Head and face cut | Fall slate | No. 17 |
| Sept. 2 | M. Kneffler | German .. | 58 | Left hand crushed | Fall stone | Pocock. |
| Sept. 8 | Webster Myers | American | 28 | Leg broken | Riding between cars which jumped the track | No. 13 |
| Oct. 4 | Jno. Stutz | American | 42 | Right ankle injured | Boiler of feed pump slid off platform | No. 12 |
| Oct. 25 | Frank Oregan | American | 18 | Finger taken off | Car jumping track | No. 20 |
| Nov. 15 | Wm. F. Links | American | 44 | Ankle injured | Fall coal | No. 20 |
| Dec. 11 | Jno. Define | Italian .. | 18 | Arm dislocated | Fall slate | Taggart No. 3. |

SUMMIT COUNTY.

| | | | | | | |
|----------|--------------------|----------|----|--------------------------|--------------------|------------|
| Aug. 19 | Ike Baughman | American | 20 | Bone in leg broken | Fall coal | Beechwood. |
| Sept. 13 | H. H. Hoover | American | 59 | Leg crushed | Fall of coal | Beechwood. |
| Dec. 9 | Earl Warner | American | 29 | Ankle broken | Fall stone | Beechwood |

TUSCARAWAS COUNTY.

| | | | | | | |
|---------|-----------------------|-------------|----|---------------------|-------------------------------|------------------|
| Jan. 5 | Jos. Williams | American | 45 | Hips injured ..... | ..... | West Goshen. |
| Jan. 6 | Lawrence Barnes | American | 36 | Leg broken | Fall clay | Robinson Clay. |
| Jan. 8 | Tarance Kline | American | 21 | Foot injured | Coupling mine cars | Beaver Dam No. 2 |
| Jan. 14 | Jos. Veber | Austrian .. | 18 | Hips squeezed | Mine cars | Goshen shaft. |
| Feb. 4 | Emilo Bertacki | Italian .. | 29 | ..... | Fall coal | Goshen Hill. |
|  |  |  |  | ..... | Tampering with fuse and | |

| Feb. 13 | Gomer Jones | American | 35 | Ear almost torn off | Caught between car and timber | Ridgeway Burton. |
|----------|--------------------|----------|----|-------------------------------------|------------------------------------|-----------------------|
| Feb. 26 | Wm. Kappler | American | 19 | Arm broken | Placing mine car on track | Central. |
| Mar. 11 | Clifford Moore | American | 20 | Right hand badly injured | Collision mine cars | Central. |
| Mar. 23 | Wm. Nanine | Italian | 43 | Seriously injured | Falling down shaft | Beaver Dam No. 1 |
| April 2 | Jos. Clarke | American | 55 | Foot injured | Fall stone | Goshen. |
| April 15 | Jno. Coultz | American | 33 | Head and side injured | Shot through rib (premature exp.) | Huff's Run. |
| May 10 | Henry Burton | American | 40 | Left leg and hip injured | Fall coal | West Goshen. |
| June 1 | Chas. Shrook | American | 27 | Foot injured | Operating punching machine | Goshen shaft. |
| June 3 | Sol Jones | American | 54 | Ankle broken | Fall rock | Goshen Hill. |
| June 8 | Thos. Jones | American | 20 | Hand injured | Coupling mine cars | Central. |
| July 2 | Bert Bevenis | American | 28 | Back injured | Fall stone | Goshen shaft. |
| July 12 | Robert Carlisle | American | 30 | Collar bone broken | Struck by loaded trip | Goshen No. 2 |
| July 13 | Tom Pannig | Slav | 35 | Arm, face and breast injured | Tamping shot which exploded | Beaver Dam No. 1 |
| July 19 | S. Rideout | American | 21 | Wrist injured | Getting out of mine car | Midvale Goshen. |
| July 30 | Wm. Wells | American | 48 | Right arm broken | Fall rock | Veleny No. 5 |
| Aug. 25 | Leslie Weaver | American | 28 | Leg injured | Fall drawslate | Veleny No. 5 |
| Sept. 25 | Curtis Beitzel | American | 23 | Second finger on right hand cut off | Fall slate | West Goshen. |
| Sept. 25 | Walter Brown | American | 29 | Hips injured | Fall stone | Goshen Hill. |
| Oct. 25 | Arthur Williams | American | 20 | End of middle finger cut off | Coupling motor trip | West Goshen. |
| Nov. 13 | Jno. Frances | Welsh | 35 | Shoulder and jaw bone broken | By wrecked trip of mine cars | Beaver Dam No. 1 |
| Dec. 6 | Fred Milheim | German | 53 | Leg crushed | Struck by flying coal from shot | Huff Run No. 1 |
| Dec. 16 | Wm. Crouch | American | 49 | Ankle injured | Fall coal | Novelty No. 1 |
| Dec. 22 | P. E. Jackson | American | .. | Rib broken and shoulder wrenched | Caught between mine car and rib | Schindler. |
| Dec. 24 | Robert Eagan | American | 26 | Finger injured | Caught in cog wheel of motor | Reeves No. 2 |
| Dec. 24 | Mervin Scheidecker | American | 24 | Leg bruised | Caught between cars of loaded trip | Federal Clay Product. |

VINTON COUNTY.

| June 17 | Albert Riggs | American | 50 | Hips injured | Caught between car and entry | Alma Cement. |
|---------|--------------|----------|----|-----------------------|------------------------------|--------------------|
| Oct. 5 | Jno. Jones | American | 50 | Head and foot injured | Fall limestone | Alma Cement. |
| Dec. 16 | Geo. Burns | American | 18 | Back injured | Fall slate | Kirkendall. |
| Dec. 22 | J. J. Sharp | American | 40 | Right foot injured | Fall slate | McArthur Brick Co. |

IMPROVEMENTS

TABLE SHOWING THE NUMBER AND CHARACTER OF THE PERMANENT IMPROVEMENTS MADE IN THE MINES OF THE STATE FROM JANUARY 1, 1909, TO DECEMBER 31, 1909, INCLUSIVE.

| Inspectors. | | Furnaces. | Fans. | Air Shafts. | Second Openings. | Safety Catches. | Stairways. | Speaking Tubes. | Ventilating Baskets. | Total. |
|-------------|-------|-----------|-------|-------------|------------------|-----------------|------------|-----------------|----------------------|--------|
| Waters | } | 4 | 1 | 4 | 7 | ..... | 2 | ..... | ..... | 18 |
| Burke | } | 6 | 9 | 6 | 13 | ..... | ..... | ..... | 4 | 38 |
| Kennedy | ..... | ..... | 2 | ..... | 6 | 1 | ..... | ..... | ..... | 9 |
| McDonald | ..... | 4 | 1 | 5 | 1 | ..... | ..... | ..... | ..... | 11 |
| Wiper | } | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Hill | ..... | 2 | 2 | 5 | 3 | 2 | 9 | 1 | ..... | 24 |
| Turner | ..... | 10 | 2 | 13 | 7 | ..... | ..... | ..... | 1 | 33 |
| Smith | ..... | 1 | 6 | ..... | 13 | 6 | 10 | 4 | ..... | 40 |
| Miller | ..... | ..... | 7 | 4 | 8 | ..... | 4 | 2 | ..... | 25 |
| Jenkins | ..... | 1 | 6 | 4 | 9 | 2 | 2 | ..... | ..... | 24 |
| Morrison | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Devore | } | 2 | 2 | ..... | 5 | ..... | 1 | ..... | ..... | 10 |
| Jones | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Total | ..... | 30 | 38 | 41 | 72 | 11 | 28 | 7 | 5 | 232 |

TABLE SHOWING THE NUMBER AND CHARACTER OF THE PERMANENT IMPROVEMENTS MADE IN THE MINES OF THE STATE BY COUNTIES DURING THE YEAR 1909.

| Counties. | Furnaces. | Fans. | Air Shafts. | Second Openings. | Safety Catches. | Stairways. | Speaking Tubes. | Ventilating Baskets. | Total. |
|------------------|-----------|-------|-------------|------------------|-----------------|------------|-----------------|----------------------|--------|
| Athens | | 2 | | 6 | 1 | | | | 9 |
| Belmont | 1 | 8 | 4 | 11 | | 5 | 2 | | 31 |
| Columbiana | 4 | | 2 | 3 | | 1 | | | 10 |
| Coshocton | 4 | | 2 | 1 | | | | | 8 |
| Guernsey | | 2 | 5 | 2 | 2 | 8 | 1 | | 20 |
| Harrison | 1 | | 3 | 1 | | 1 | | | 6 |
| Hocking | 6 | 4 | 5 | 10 | | | | 4 | 29 |
| Jackson | | 1 | 2 | 2 | | 1 | | | 6 |
| Jefferson | 1 | 7 | 1 | 10 | 2 | 1 | | | 22 |
| Lawrence | 2 | | 2 | 3 | | | | | 7 |
| Mahoning | | | | 2 | | 1 | | | 3 |
| Medina | | | | 2 | | 2 | | | 4 |
| Meigs | | 2 | 1 | 1 | | | | | 4 |
| Muskingum | 3 | 1 | 1 | 1 | | | | | 6 |
| Noble | 2 | | | 1 | | 1 | | | 4 |
| Ottawa | | 1 | | 1 | | | | | 2 |
| Perry | 1 | | 4 | | | | | | 5 |
| Scioto | 1 | | | 1 | | 1 | | | 3 |
| Stark | 1 | 4 | | 5 | 4 | 4 | 3 | | 21 |
| Tuscarawas | 2 | 2 | 8 | 4 | | | | 1 | 17 |
| Vinton | 1 | 3 | | 3 | | | | | 7 |
| Wayne | | 1 | | 2 | 2 | 2 | 1 | | 8 |
| Total | 30 | 38 | 41 | 72 | 11 | 28 | 7 | 5 | 232 |

TABLE SE
IMPR
ARY

ANNUAL REPORT

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TABLE SHOWING THE NUMBER AND CHARACTER OF PERMANENT IMPROVEMENTS MADE IN THE MINES OF THE STATE FROM 1884 TO 1909, INCLUSIVE

| Years. | Furnaces. | Fans. | Air Shafts. | Second Openings. | Safety Catches. | Stairways. | Speaking Tubes. | Ventilating Baskets. | Totals. |
|-------------|-----------|-------|-------------|------------------|-----------------|------------|-----------------|----------------------|---------|
| 1884..... | 43 | 10 | 45 | 10 | 13 | 12 | | | 63 |
| 1885..... | 45 | 19 | 22 | 7 | | 8 | | | 122 |
| 1886..... | 13 | 6 | 50 | 10 | | 12 | | | 63 |
| 1887..... | 39 | 9 | 52 | 17 | 13 | 12 | | | 113 |
| 1888..... | 43 | 4 | 57 | 21 | 7 | 3 | 3 | | 141 |
| 1889..... | 42 | 13 | 66 | 46 | 8 | 11 | 4 | | 146 |
| 1890..... | 57 | 20 | 55 | 26 | 19 | 19 | 5 | | 212 |
| 1891..... | 53 | 12 | 65 | 27 | 13 | 7 | 4 | 2 | 194 |
| 1892..... | 37 | 26 | 131 | 67 | 16 | 19 | 5 | 4 | 181 |
| 1893..... | 77 | 35 | 106 | 60 | 7 | 11 | 3 | 9 | 354 |
| 1894..... | 55 | 18 | 105 | 60 | 9 | 11 | 3 | 13 | 269 |
| 1895..... | 66 | 17 | 93 | 81 | 5 | 7 | 3 | 14 | 284 |
| 1896..... | 56 | 21 | 75 | 44 | 4 | 7 | 3 | 9 | 280 |
| 1897..... | 40 | 22 | 73 | 45 | 7 | 11 | 1 | 15 | 201 |
| 1898..... | 44 | 17 | 60 | 45 | 11 | 13 | 7 | 3 | 212 |
| 1899..... | 36 | 25 | 69 | 31 | 1 | 9 | 1 | 8 | 200 |
| 1900..... | 24 | 27 | 66 | 31 | 11 | 5 | 7 | 3 | 170 |
| 1901..... | 40 | 45 | 98 | 37 | 21 | 20 | 10 | 8 | 268 |
| 1902..... | 50 | 59 | 94 | 49 | 17 | 19 | 10 | 9 | 303 |
| 1903..... | 56 | 71 | 63 | 55 | 21 | 18 | 12 | 3 | 325 |
| 1904..... | 31 | 54 | 32 | 121 | 12 | 42 | 6 | | 257 |
| 1905..... | 22 | 55 | 37 | 80 | 24 | 23 | 3 | 4 | 290 |
| 1906..... | 26 | 48 | 34 | 91 | 35 | 22 | 15 | 4 | 245 |
| 1907..... | 28 | 61 | 51 | 82 | 32 | 25 | 8 | 5 | 290 |
| 1908..... | 29 | 66 | 41 | 72 | 11 | 28 | 7 | 5 | 293 |
| 1909..... | 30 | 38 | | | | | | | 232 |
| Totals..... | 1,082 | 803 | 1,640 | 1,295 | 317 | 362 | 120 | 118 | 5,647 |

WEIGH SCALES

TABLE SHOWING TOTAL NUMBER AND KIND OF SCALES TESTED IN EACH COUNTY, ALSO NUMBER FOUND CORRECT AND NUMBER FOUND INCORRECT.

| Counties. | Railroad. | | Platform. | | Hopper. | | Total. |
|------------------|-----------|------------|-----------|------------|----------|------------|--------|
| | Correct. | Incorrect. | Correct. | Incorrect. | Correct. | Incorrect. | |
| Athens | 4 | 1 | | | 2 | 1 | 8 |
| Belmont | | | | | 13 | 3 | 16 |
| Carroll | | | | | 1 | 2 | 3 |
| Columbiana | | | 1 | | 1 | | 2 |
| Guernsey | | | | | 4 | 1 | 5 |
| Hocking | 1 | | | | 2 | | 3 |
| Jackson | | | | | 2 | 1 | 3 |
| Jefferson | | | 1 | | 8 | | 9 |
| Meigs | | | | | 2 | | 2 |
| Morgan | | | | | | 1 | 1 |
| Muskingum | | | | | 1 | 1 | 2 |
| Noble | | | | | 1 | | 1 |
| Perry | 1 | | | | 2 | | 3 |
| Stark | | | 1 | 1 | 5 | 3 | 10 |
| Summit | | | | | 1 | | 1 |
| Tuscarawas | | | | | 9 | | 9 |
| Vinton | | | | 1 | 3 | | 4 |
| Total..... | 6 | 1 | 3 | 2 | 57 | 13 | 82 |

Total number railroad scales tested..... 7
 Per cent. found correct..... 86%
 Per cent. found incorrect..... 14%
 Total number platform scales tested..... 5
 Per cent. found correct..... 60%
 Per cent. found incorrect..... 40%
 Total number hopper scales tested..... 70
 Per cent. found correct..... 81%
 Per cent. found incorrect..... 19%
 Per cent. found correct of total number tested..... 81%
 Per cent. found incorrect of total number tested..... 19%

TABLE SHOWING THE NUMBER OF MALES TESTED AND RESULT OF THE EXAMINATION FROM 1871 TO DECEMBER 31, 1909, INCLUSIVE

| Years | Number of Males of Mexican Tested. | Number of Males Found Correct. | Number of Males Found In correct. |
|-------------|------------------------------------|--------------------------------|-----------------------------------|
| 1888..... | 20 | 21 | 21 |
| 1889..... | 20 | 21 | 21 |
| 1890..... | 20 | 21 | 21 |
| 1891..... | 20 | 21 | 21 |
| 1892..... | 20 | 21 | 21 |
| 1893..... | 20 | 21 | 21 |
| 1894..... | 20 | 21 | 21 |
| 1895..... | 20 | 21 | 21 |
| 1896..... | 20 | 21 | 21 |
| 1897..... | 20 | 21 | 21 |
| 1898..... | 20 | 21 | 21 |
| 1899..... | 20 | 21 | 21 |
| 1900..... | 20 | 21 | 21 |
| 1901..... | 20 | 21 | 21 |
| 1902..... | 20 | 21 | 21 |
| 1903..... | 20 | 21 | 21 |
| 1904..... | 20 | 21 | 21 |
| 1905..... | 20 | 21 | 21 |
| 1906..... | 20 | 21 | 21 |
| 1907..... | 20 | 21 | 21 |
| 1908..... | 20 | 21 | 21 |
| 1909..... | 20 | 21 | 21 |
| Totals..... | 2,500 | 2,039 | 461 |

PRODUCTION OF FIRE CLAY

TABLE SHOWING THE PRODUCTION OF FIRE CLAY FOR THE YEAR 1909
AS COMPARED WITH 1908, AND THE NUMBER OF PERSONS EM-
PLOYED.

| Counties. | Average number days worked in 1908 on 8-hour basis. | Number of men employed in 1908. | Number of tons mined in 1908. | Average number days worked in 1909 on 8-hour basis. | Number of men employed in 1909. | Number of tons mined in 1909. | Gain in men. | Loss in men. | Gain in tons. | Loss in tons. |
|------------------|--|------------------------------------|----------------------------------|--|------------------------------------|----------------------------------|--------------|--------------|---------------|---------------|
| Athens | 244 | 73 | 183,605 | 309 | 93 | 206,815 | 20 | ... | 23,210 | ... |
| Belmont | 249 | 41 | 24,862 | 373 | 11 | 27,508 | ... | 30 | 2,646 | ... |
| Carroll | 241 | 106 | 163,722 | 268 | 101 | 182,588 | ... | 5 | 18,866 | ... |
| Columbiana | 196 | 72 | 102,760 | 248 | 74 | 109,575 | 2 | ... | 6,815 | ... |
| Coshocton | ... | ... | ... | 242 | 13 | 16,843 | 13 | ... | 16,843 | ... |
| Guernsey | 200 | 4 | 5,590 | 280 | 9 | 6,400 | 5 | ... | 810 | ... |
| Hocking | 182 | 51 | 109,567 | 267 | 86 | 128,239 | 35 | ... | 18,672 | ... |
| Holmes | 200 | 4 | 14,000 | 300 | 1 | 1,500 | ... | 3 | ... | 12,500 |
| Jackson | 123 | 17 | 7,921 | 238 | 47 | 40,736 | 30 | ... | 32,815 | ... |
| Jefferson | 255 | 173 | 335,070 | 241 | 196 | 344,697 | 23 | ... | 9,627 | ... |
| Lawrence | 213 | 54 | 92,282 | 145 | 63 | 36,264 | 9 | ... | 56,018 | ... |
| Mahoning | 196 | 27 | 4,350 | 38 | 13 | 1,950 | ... | 14 | ... | 2,400 |
| Muskingum | 159 | 33 | 51,504 | 261 | 39 | 66,554 | 6 | ... | 15,050 | ... |
| Perry | 204 | 54 | 152,347 | 210 | 85 | 96,097 | 31 | ... | 56,250 | ... |
| Scioto | 223 | 133 | 84,373 | 242 | 76 | 182,742 | ... | 57 | 98,369 | ... |
| Stark | 243 | 77 | 130,718 | 370 | 153 | 187,876 | 76 | ... | 57,158 | ... |
| Summit | 275 | 82 | 220,823 | 312 | 70 | 180,278 | ... | 12 | 40,545 | ... |
| Tuscarawas | 251 | 175 | 308,125 | 288 | 177 | 287,426 | 2 | ... | 20,699 | ... |
| Vinton | 230 | 6 | 10,000 | 257 | 12 | 185,000 | 6 | ... | 175,000 | ... |
| Wayne | 107 | 9 | 2,400 | ... | ... | ... | ... | 9 | ... | 2,400 |
| Total..... | 229 | 1,191 | 2,004,019 | 266 | 1,319 | 2,289,088 | 258 | 130 | 475,881 | 190,812 |

Note:—

| | |
|--|-----------|
| Total tons produced in 1909..... | 2,289,088 |
| Total tons produced in 1908..... | 2,004,019 |
| Net gain | 285,069 |
| Average days worked in 1909..... | 266 |
| Average days worked in 1908..... | 229 |
| Net gain | 37 |
| Total number men employed in 1909..... | 1,319 |
| Total number men employed in 1908..... | 1,191 |
| Net gain | 128 |

TABLE SHOWING THE FIRE CLAY PRODUCTION OF THE STATE FROM
JANUARY 1, 1884, TO DECEMBER 31, 1909, INCLUSIVE.

| Years. | Output Tons. | Gain. | Loss. |
|-----------|-----------------|---------|---------|
| 1884..... | 168,208 | ..... | ..... |
| 1885..... | 153,756 | ..... | 14,452 |
| 1886..... | 266,709 | 112,953 | ..... |
| 1887..... | 366,476 | 99,767 | ..... |
| 1888..... | 471,794 | 105,313 | ..... |
| 1889..... | 574,129 | 102,335 | ..... |
| 1890..... | 833,159 | 259,030 | ..... |
| 1891..... | 1,087,560 | 254,401 | ..... |
| 1892..... | 1,253,110 | 165,550 | ..... |
| 1893..... | 1,032,348 | ..... | 220,762 |
| 1894..... | 942,913 | ..... | 89,435 |
| 1895..... | 844,832 | ..... | 97,081 |
| 1896..... | 827,450 | ..... | 17,382 |
| 1897..... | 822,727 | ..... | 4,723 |
| 1898..... | 1,026,922 | 204,195 | ..... |
| 1899..... | 1,173,697 | 146,775 | ..... |
| 1900..... | 1,473,088 | 299,391 | ..... |
| 1901..... | 1,337,181 | ..... | 135,907 |
| 1902..... | 1,528,829 | 191,648 | ..... |
| 1903..... | 1,567,603 | 38,774 | ..... |
| 1904..... | 2,045,848 | 478,245 | ..... |
| 1905..... | 2,039,292 | ..... | 6,556 |
| 1906..... | 2,126,179 | 86,887 | ..... |
| 1907..... | 2,177,174 | ..... | 50,995 |
| 1908..... | 2,004,019 | ..... | 252 |
| 1909..... | 2,289,088 | 285,069 | ..... |

PRODUCTION OF LIMESTONE

BLE SHOWING LIMESTONE PRODUCTION IN OHIO DURING DAYS WORKED ON

County.

| | | | | | | | | | | | |
|----------|-----|-------|---------|-----------|---------|---------|--------|-------|-------|---------|-----------|
| Putnam | 242 | 91 | 1,080 | 2,000 | ..... | 1,100 | ..... | ..... | ..... | 30,000 | 65,400 |
| Sandusky | 168 | 79 | ..... | ..... | ..... | 2,000 | ..... | ..... | ..... | ..... | 47,489 |
| Scioto | 285 | 213 | 296,672 | ..... | 6,414 | ..... | 44 | ..... | ..... | 200 | 197,969 |
| Seneca | 256 | 17 | ..... | 20,250 | ..... | ..... | ..... | ..... | ..... | 10,042 | ..... |
| Stark | 281 | 221 | 16,240 | 176,691 | ..... | ..... | 2,334 | ..... | ..... | 73,162 | 210,640 |
| Van Wert | 199 | 55 | 1,050 | ..... | ..... | ..... | ..... | ..... | ..... | 10,000 | 159,300 |
| Vinton | 176 | 112 | ..... | 61,000 | ..... | ..... | 700 | ..... | ..... | 86,000 | ..... |
| Wood | 243 | 85 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 276,777 |
| | 211 | 188 | 8,932 | ..... | ..... | ..... | 400 | ..... | ..... | ..... | ..... |
| Totals | 285 | 4,705 | 924,244 | 1,071,855 | 115,608 | 123,634 | 13,520 | 9,643 | 4,770 | 373,519 | 3,086,882 |

TABLE SHOWING THE COMPARATIVE PRODUCTION OF LIMESTONE IN OHIO FROM 1886 TO 1909 INCLUSIVE.

| Years. | Average Number Days Worked. | Number of Men Employed. | Number of Tons of 2,000 Pounds Each Burned for Lime. | Number of Tons of 2,000 Pounds Each Burned for Fluxing. | Cubic Feet of Dimension Stone. | Cubic Yards of Ordinary Building Stone. | Cubic Yards for Piers and Protection Purposes. | Square Feet of Flagging. | Square Feet of Paving. | Lineal Feet of Curbing. | Cubic Yards of Ballast and Macadam. | Cubic Yards for Cement and Concrete. |
|--------|--------------------------------------|-------------------------|--|---|-----------------------------------|--|---|--------------------------|------------------------|-------------------------|--|---|
| 1886 | 149 | 2,383 | 517,270 | 328,080 | 566,697 | 295,231 | 63,050 | 187,900 | 154,636 | 60,650 | 186,810 | ..... |
| 1887 | 182 | 2,767 | 619,027 | 478,674 | 950,393 | 385,247 | 78,932 | 350,954 | 289,195 | 139,174 | 416,018 | ..... |
| 1888 | 165 | 3,025 | 602,074 | 666,481 | 1,795,038 | ..... | 78,381 | 590,901 | 313,855 | 205,227 | 445,770 | ..... |
| 1889 | 165 | 2,631 | 849,442 | 235,288 | 898,886 | 364,685 | 69,876 | 413,400 | 586,361 | 209,389 | 354,544 | ..... |
| 1890 | 171 | 2,445 | 689,827 | 308,521 | 333,076 | 270,367 | 81,414 | 673,850 | 567,313 | 185,434 | 432,650 | ..... |
| 1891 | 143 | 3,286 | 744,946 | 284,478 | 634,901 | 361,637 | 65,295 | 417,855 | 4,948,939 | 200,756 | 622,194 | ..... |
| 1892 | 132 | 3,353 | 631,049 | 217,981 | 1,057,157 | 323,600 | 48,102 | 171,567 | 2,883,208 | 101,820 | 704,784 | ..... |
| 1893 | 149 | 2,929 | 396,690 | 108,376 | 747,712 | 290,614 | 67,374 | 226,654 | 393,883 | 209,327 | 767,142 | ..... |
| 1894 | 138 | 2,484 | 349,631 | 240,173 | 1,393,792 | 181,722 | 22,839 | 206,736 | 312,868 | 144,042 | 435,764 | ..... |
| 1895 | 127 | 3,829 | 1,175,988 | 429,632 | 500,648 | 253,900 | 48,675 | 573,634 | 640,836 | 152,873 | 650,217 | ..... |
| 1896 | 132 | 3,186 | 397,162 | 623,544 | 260,289 | 215,900 | 29,114 | 137,579 | 183,373 | 71,286 | 553,329 | ..... |
| 1897 | 131 | 3,398 | 481,871 | 320,437 | 371,741 | 248,392 | 97,548 | 145,331 | 113,025 | 55,168 | 629,044 | ..... |
| 1898 | 132 | 3,149 | 624,921 | 571,029 | 605,172 | 368,343 | 47,762 | 71,606 | 43,256 | 52,940 | 729,896 | ..... |
| 1899 | 142 | 3,165 | 626,274 | 791,701 | 405,112 | 264,640 | 87,099 | 100,133 | 81,796 | 57,091 | 864,349 | ..... |
| 1900 | 141 | 3,680 | 547,046 | 882,426 | 166,276 | 374,919 | 120,264 | 131,837 | 64,170 | 40,550 | 1,268,416 | ..... |
| 1901 | 154 | 4,135 | 554,523 | 1,419,087 | 318,995 | 304,312 | 134,784 | 103,177 | 48,512 | 37,828 | 1,551,378 | ..... |
| 1902 | 181 | 3,946 | 652,990 | 1,489,974 | 93,186 | 273,140 | 108,074 | 65,904 | 42,337 | 37,828 | 1,886,104 | ..... |
| 1903 | 167 | 3,848 | 548,068 | 1,501,038 | 106,861 | 286,683 | 88,114 | 44,330 | 204,648 | 16,726 | 1,271,687 | ..... |
| 1904 | 229 | 3,976 | 604,979 | 1,402,829 | 102,044 | 323,209 | 148,497 | 44,638 | 145,934 | 20,863 | 1,586,865 | ..... |
| 1905 | 245 | 4,700 | 630,203 | 2,143,001 | 937,702 | 300,368 | 77,236 | 46,398 | 36,403 | 14,769 | 2,987,166 | 297,102 |

| | | | | | | | | | | | | |
|-----------------|-------|-------|---------|-----------|---------|---------|--------|-------|--------|-------|-----------|---------|
| 1907 | 248 | 5,420 | 814,726 | 2,718,820 | 92,331 | 160,400 | 49,981 | 4,117 | 98,125 | 6,275 | 2,937,802 | 351,120 |
| 1908 | 225 | 4,678 | 658,182 | 1,459,588 | 99,100 | 189,513 | 49,981 | 4,117 | 98,125 | 6,275 | 2,937,802 | 351,120 |
| 1909 | 285 | 4,706 | 924,244 | 1,071,855 | 115,608 | 123,634 | 13,520 | 9,643 | ..... | 4,770 | 3,086,882 | 373,519 |
| Gain over 1908. | 60 | 27 | 266,062 | ..... | 16,508 | ..... | ..... | 5,526 | ..... | ..... | 149,080 | 16,399 |
| Loss from 1908. | ..... | ..... | ..... | 387,733 | ..... | 8,879 | 36,361 | ..... | 38,125 | 1,505 | ..... | ..... |

PRODUCTION OF IRON ORE

TABLE SHOWING THE PRODUCTION OF IRON ORE BY COUNTIES DURING THE YEARS 1908 AND 1909, AND THE GAIN AND LOSS IN EACH COUNTY.

| Counties. | Tonnage 1908. | Tonnage 1909. | Gain. | Loss. |
|------------------|------------------|------------------|--------|-------|
| Jackson | 20 | 2,080 | 2,060 | ..... |
| Lawrence | 2,047 | 392 | ..... | 1,655 |
| Perry ..... | ..... | 8,837 | 8,837 | ..... |
| Scioto | 53 | 79 | 26 | ..... |
| Tuscarawas ..... | ..... | 1,004 | 1,004 | ..... |
| Totals | 2,120 | 12,392 | 11,927 | 1,655 |

Note:—Net gain, 10,272 tons.

TABLE SHOWING THE IRON ORE PRODUCTION OF THE STATE FROM 1884 TO 1909, INCLUSIVE.

| Years. | Blackband. | | | Hematite. | | | Total. |
|------------|--------------|--------|--------|--------------|---------|--------|---------|
| | Output Tons. | Loss. | Gain. | Output Tons. | Loss. | Gain. | |
| 1884 ..... | ..... | ..... | ..... | ..... | ..... | ..... | 276,286 |
| 1885 | 70,931 | ..... | ..... | 188,646 | ..... | ..... | 259,577 |
| 1886 | 83,947 | ..... | 13,012 | 260,537 | ..... | 71,891 | 344,484 |
| 1887 | 87,965 | ..... | 4,018 | 289,500 | ..... | 28,963 | 377,465 |
| 1888 | 82,054 | 5,911 | ..... | 171,298 | 118,202 | ..... | 253,352 |
| 1889 | 70,398 | 11,656 | ..... | 182,011 | ..... | 10,713 | 252,409 |
| 1890 | 41,848 | 28,550 | ..... | 127,240 | 54,771 | ..... | 169,088 |
| 1891 | 15,540 | 26,308 | ..... | 52,444 | 74,796 | ..... | 67,984 |
| 1892 | 8,680 | 6,860 | ..... | 81,042 | ..... | 28,598 | 89,722 |
| 1893 | 3,837 | 4,843 | ..... | 64,423 | 16,619 | ..... | 68,260 |
| 1894 ..... | ..... | 3,837 | ..... | 58,043 | 6,380 | ..... | 58,043 |
| 1895 ..... | ..... | ..... | ..... | 93,051 | ..... | 35,008 | 93,051 |
| 1896 ..... | ..... | ..... | ..... | 70,765 | 22,286 | ..... | 70,765 |
| 1897 ..... | ..... | ..... | ..... | 50,267 | 20,498 | ..... | 50,267 |
| 1898 ..... | ..... | ..... | ..... | 51,659 | ..... | 1,392 | 51,659 |
| 1899 ..... | ..... | ..... | ..... | 25,359 | 16,800 | ..... | 25,359 |
| 1900 ..... | ..... | ..... | ..... | 52,266 | ..... | 26,907 | 52,266 |
| 1901 ..... | ..... | ..... | ..... | 41,325 | 10,941 | ..... | 41,325 |
| 1902 ..... | ..... | ..... | ..... | 10,681 | 30,644 | ..... | 10,681 |
| 1903 ..... | ..... | ..... | ..... | 12,995 | ..... | 2,314 | 12,995 |
| 1904 ..... | ..... | ..... | ..... | 20,652 | ..... | 7,657 | 20,652 |
| 1905 ..... | ..... | ..... | ..... | 14,207 | 6,445 | ..... | 14,207 |
| 1906 ..... | ..... | ..... | ..... | 8,515 | 5,692 | ..... | 8,515 |
| 1907 ..... | ..... | ..... | ..... | 2,423 | 6,092 | ..... | 2,423 |
| 1908 ..... | ..... | ..... | ..... | 2,120 | 303 | ..... | 2,120 |
| 1909 ..... | ..... | ..... | ..... | 12,392 | ..... | 10,272 | 12,392 |

PRODUCTION OF GYPSUM

TABLE SHOWING COMPARISON OF GYPSUM PRODUCTION OF 1909, COMPARED WITH THE YEAR 1908; NUMBER OF EMPLOYEES; DAYS WORKED DURING 1909.

| Ottawa County. | Number Tons Produced in 1908. | Number Tons Produced in 1909. | Gain. | Loss. | Number of Employees in 1909. | Number of Days Worked in 1909. |
|-------------------------|-------------------------------|-------------------------------|--------|-------|------------------------------|--------------------------------|
| American Gypsum Co..... | 74,000 | 108,517 | 34,517 | ..... | 85 | 285 |
| U. S. Gypsum Co..... | 80,436 | 120,287 | 39,851 | ..... | 115 | 250 |
| Totals | 154,436 | 228,804 | 74,368 | ..... | 200 | ..... |

Note:—

Average days worked, 265.

Average tons produced for each man for the year 1909, 1,144.

Average tons produced for each man per day, 1909, 4.3.

Gain in tonnage as compared with year 1908, 74,368.

The following compilations of the Ohio Coals are published through the courtesy of the University of Illinois Engineering Experiment Station, W. F. M. Goss, Dean and Director:

TABLE 20.

UNIT COAL VALUES.

Compiled from Bulletin 9, Fourth Series, 1908, Ohio State Geological Survey.

| Number. | County. | Analyses of Coal as Received. | | | | "Unit Coal" Basis. |
|---------|---------|-------------------------------|------|----------|----------|--|
| | | Moisture. | Ash. | Sulphur. | B. t. u. | B. t. u. — 5000 S 1.00 — (1.08 Ash + $\frac{2}{100}$ S.) |

CLARION OR NO. 4 COAL.

| | | | | | | |
|---------------|----------------|------|-------|------|-------|-------|
| 65 | Lawrence | 6.34 | 17.41 | 5.29 | 10741 | 14562 |
| 67 | Lawrence | 5.86 | 15.28 | 5.36 | 11133 | 14547 |
| 68 | Lawrence | 6.11 | 9.94 | 3.61 | 11957 | 14508 |
| 66 | Lawrence | 6.00 | 11.86 | 5.10 | 11734 | 14645 |
| 64 | Scioto | 6.80 | 9.34 | 3.45 | 11763 | 14272 |
| 63 | Jackson | 4.90 | 13.70 | 6.14 | 11495 | 14545 |
| 62 | Jackson | 5.31 | 13.54 | 6.08 | 11381 | 14436 |
| 55 | Jackson | 5.61 | 8.09 | 3.70 | 12279 | 14465 |
| 56 | Jackson | 4.98 | 9.80 | 4.08 | 12154 | 14538 |
| 57 | Jackson | 4.71 | 8.61 | 3.73 | 12361 | 14505 |
| 60 | Jackson | 5.33 | 8.40 | 3.72 | 12206 | 14387 |
| 59 | Vinton | 4.72 | 11.21 | 4.16 | 12049 | 14640 |
| 61 | Vinton | 4.52 | 8.85 | 4.23 | 12337 | 14505 |
| 54 | Vinton | 5.02 | 8.15 | 2.81 | 12469 | 14639 |
| 58 | Vinton | 4.61 | 11.10 | 5.28 | 12053 | 14645 |
| 70 | Vinton | 5.02 | 8.97 | 3.32 | 12528 | 14780 |
| 69 | Vinton | 4.95 | 9.32 | 3.53 | 12445 | 14775 |
| Average | | 5.34 | 10.80 | 4.33 | 11947 | 14551 |

LOWER KITTANING OR NO. 5 COAL.

| | | | | | | |
|---------------|------------------|------|-------|------|-------|-------|
| 74 | Lawrence | 7.57 | 8.79 | 3.20 | 12199 | 14830 |
| 75 | Lawrence | 8.07 | 9.71 | 2.13 | 11927 | 14727 |
| 76 | Jackson | 8.39 | 7.42 | 2.65 | 12190 | 14679 |
| 71 | Perry | 6.85 | 10.16 | 4.72 | 11864 | 14612 |
| 72 | Perry | 6.74 | 7.12 | 2.58 | 12393 | 14574 |
| 73 | Muskingum | 5.05 | 7.77 | 4.80 | 12569 | 14691 |
| 77b | Jefferson | 2.46 | 7.40 | 3.82 | 13664 | 15406 |
| 77 | Tuscarawas | 5.30 | 7.71 | 3.25 | 12902 | 15061 |
| 77a | Mahoning | 5.23 | 4.72 | 2.17 | 13504 | 15141 |
| Average | | 6.18 | 7.87 | 3.26 | 12578 | 14863 |

MIDDLE KITTANING OR NO. 6 COAL.

| | | | | | | |
|-----|----------------|------|-------|------|-------|-------|
| 136 | Lawrence | 5.99 | 4.82 | 3.61 | 13165 | 14957 |
| 82a | Lawrence | 6.64 | 10.92 | 3.32 | 11927 | 14749 |
| 82b | Gallia | 8.08 | 8.52 | 3.64 | 12091 | 14753 |
| 89a | Athens | 6.36 | 8.49 | 0.51 | 12454 | 14764 |
| 83 | Athens | 6.17 | 7.82 | 0.90 | 12362 | 14511 |
| 84 | Athens | 6.70 | 6.75 | 2.28 | 12458 | 14563 |

TABLE 20.
UNIT COAL VALUES—(Continued)

| Number. | County. | Analyses of Coal as Received. | | | | "Unit Coal" Basis. | |
|---|------------------|-------------------------------|-------|----------|----------|---|--|
| | | Moisture. | Ash. | Sulphur. | B. t. u. | B. t. u. — 5000 S S | 1.00 — (1.08 Ash + $\frac{1}{2}$ S. — S S) |
| | | | | | | | |
| MIDDLE KITTANING OR NO. 6 COAL—Continued. | | | | | | | |
| 85 | Athens | 6.80 | 8.05 | 2.14 | 12229 | | 14547 |
| 82 | Vinton | 4.90 | 10.15 | 4.25 | 12321 | | 14902 |
| 81 | Hocking | 6.52 | 8.03 | 3.52 | 12330 | | 14666 |
| 89 | Athens | 7.14 | 6.72 | 1.65 | 12353 | | 14488 |
| 90 | Athens | 7.28 | 6.73 | 0.86 | 12409 | | 14552 |
| 86 | Hocking | 7.55 | 5.85 | 0.77 | 12510 | | 14552 |
| 87 | Hocking | 7.45 | 4.81 | 0.66 | 12703 | | 14563 |
| 88 | Hocking | 7.40 | 5.00 | 1.06 | 12649 | | 14542 |
| 80 | Hocking | 6.55 | 6.97 | 2.57 | 12422 | | 14548 |
| 79 | Perry | 7.76 | 7.47 | 1.45 | 12190 | | 14534 |
| 91 | Perry | 5.79 | 5.91 | 1.00 | 12569 | | 14510 |
| 78 | Perry | 7.00 | 6.95 | 2.33 | 12384 | | 14569 |
| 92 | Perry | 5.25 | 9.86 | 3.43 | 12191 | | 14620 |
| 93 | Perry | 5.90 | 10.10 | 4.96 | 12035 | | 14649 |
| 95 | Perry | 6.72 | 6.64 | 2.43 | 12425 | | 14513 |
| 94 | Perry | 7.21 | 5.26 | 2.34 | 12614 | | 14563 |
| 97 | Perry | 5.70 | 8.45 | 3.38 | 12332 | | 14600 |
| 98 | Perry | 6.40 | 7.58 | 2.72 | 12361 | | 14569 |
| 101 | Muskingum | 5.08 | 9.77 | 5.54 | 12244 | | 14716 |
| 100 | Muskingum | 4.67 | 9.83 | 4.10 | 12371 | | 14756 |
| 96 | Muskingum | 5.02 | 9.56 | 5.97 | 12164 | | 14581 |
| 99 | Muskingum | 5.44 | 9.28 | 3.77 | 12280 | | 14663 |
| 104 | Muskingum | 5.55 | 5.23 | 3.63 | 12944 | | 14703 |
| 102 | Muskingum | 4.75 | 9.28 | 5.35 | 12337 | | 14668 |
| 103 | Muskingum | 4.62 | 6.58 | 4.49 | 12827 | | 14689 |
| 111 | Coshocton | 4.37 | 5.36 | 3.61 | 13045 | | 14643 |
| 112 | Coshocton | 10.93 | 6.64 | 2.03 | 11039 | | 13871 |
| 108 | Coshocton | 4.33 | 5.59 | 4.00 | 13084 | | 14736 |
| 109 | Coshocton | 5.12 | 7.02 | 3.87 | 12719 | | 14708 |
| 105 | Coshocton | 5.32 | 6.30 | 4.22 | 12755 | | 14661 |
| 110 | Coshocton | 5.60 | 13.28 | 4.87 | 11200 | | 14159 |
| 113 | Coshocton | 4.44 | 4.45 | 3.54 | 13232 | | 14702 |
| 114 | Coshocton | 4.58 | 8.75 | 5.36 | 12380 | | 14589 |
| 118 | Coshocton | 5.32 | 8.60 | 4.36 | 12290 | | 14546 |
| 120 | Coshocton | 4.50 | 5.97 | 3.63 | 12911 | | 14623 |
| 107 | Coshocton | 5.40 | 5.08 | 3.18 | 12949 | | 14641 |
| 133 | Tuscarawas | 3.45 | 7.67 | 5.22 | 12843 | | 14733 |
| 131 | Tuscarawas | 3.41 | 9.38 | 4.88 | 12548 | | 14686 |
| 115 | Tuscarawas | 4.72 | 5.47 | 4.05 | 12958 | | 14637 |
| 130 | Tuscarawas | 3.78 | 8.42 | 3.83 | 12782 | | 14808 |
| 129 | Tuscarawas | 3.81 | 6.01 | 3.24 | 13151 | | 14774 |
| 124 | Tuscarawas | 4.10 | 5.21 | 3.25 | 13196 | | 14730 |
| 134 | Tuscarawas | 3.18 | 6.93 | 4.12 | 13149 | | 14865 |
| 116 | Tuscarawas | 5.19 | 5.87 | 3.55 | 12820 | | 14613 |
| 128 | Tuscarawas | 4.30 | 7.63 | 3.97 | 12602 | | 14546 |
| 117 | Coshocton | 4.70 | 11.29 | 5.60 | 11869 | | 14481 |
| 106 | Coshocton | 5.30 | 6.15 | 3.72 | 12751 | | 14609 |
| 121 | Tuscarawas | 3.52 | 6.01 | 3.17 | 13135 | | 14705 |
| 122 | Tuscarawas | 4.94 | 9.50 | 4.19 | 12341 | | 14706 |

*Low B. t. u. due to weathering.

TABLE 20.
UNIT COAL VALUES—(Continued.)

| Number. | County. | Analyses of Coal as Received. | | | | "Unit Coal" Basis. |
|---------|---------|-------------------------------|------|----------|----------|---|
| | | Moisture. | Ash. | Sulphur. | B. t. u. | B. t. u. — 5000 S |
| | | | | | | 1.00 — (1.08 Ash + $\frac{2}{100}$ S.) |

MIDDLE KITTANING OR NO. 6 COAL—Concluded.

| | | | | | | |
|---------------|------------------|------|-------|------|-------|-------|
| 123 | Tuscarawas | 3.51 | 7.69 | 4.56 | 12875 | 14761 |
| 132 | Carroll | 3.76 | 6.79 | 3.06 | 13028 | 14760 |
| 138 | Tuscarawas | 7.15 | 4.56 | 2.62 | 12949 | 14820 |
| 127 | Tuscarawas | 4.66 | 6.22 | 3.28 | 12775 | 14525 |
| 119 | Holmes | 7.31 | 4.21 | 1.00 | 12514 | 14230 |
| 125 | Tuscarawas | 4.69 | 9.06 | 4.70 | 12386 | 14649 |
| 126 | Tuscarawas | 4.92 | 7.04 | 2.91 | 12748 | 14676 |
| 135 | Stark | 6.66 | 8.22 | 2.66 | 12559 | 14971 |
| 137 | Columbiana | 3.60 | 4.60 | 1.76 | 14020 | 15401 |
| 139 | Stark | 5.65 | 10.08 | 4.13 | 12362 | 14973 |
| Average | | 5.56 | 7.36 | 3.30 | 12564 | 14644 |

UPPER FREEPORT, WATERLOO OR NO. 7 COAL.

| | | | | | | |
|---------------|----------------|------|-------|------|-------|-------|
| 147 | Lawrence | 7.20 | 10.67 | 2.33 | 11801 | 14824 |
| 144 | Lawrence | 7.85 | 12.18 | 2.66 | 11349 | 14465 |
| 145 | Lawrence | 8.37 | 8.23 | 1.29 | 11873 | 14396 |
| 146 | Lawrence | 8.45 | 11.28 | 0.93 | 11529 | 14547 |
| 142 | Gallia | 7.62 | 12.39 | 1.81 | 11468 | 14586 |
| 140 | Lawrence | 7.13 | 8.91 | 1.31 | 12089 | 14570 |
| 141 | Lawrence | 8.77 | 8.71 | 0.76 | 11855 | 14517 |
| 143 | Lawrence | 8.38 | 10.09 | 1.84 | 11695 | 14556 |
| Average | | 7.97 | 10.31 | 1.62 | 11707 | 14531 |

UPPER FREEPORT OR NO. 7 COAL.

| | | | | | | |
|---------------|-----------------|------|-------|------|-------|-------|
| 148 | Muskingum | 4.89 | 7.78 | 4.36 | 12499 | 14566 |
| 149 | Muskingum | 4.72 | 7.56 | 5.00 | 12683 | 14736 |
| 150 | Muskingum | 5.11 | 12.60 | 3.84 | 11804 | 14667 |
| 151 | Coshocton | 6.40 | 3.19 | 2.01 | 13185 | 14694 |
| Average | | 5.28 | 7.78 | 3.80 | 12542 | 14665 |

PITTSBURG OR NO. 8 COAL.

| | | | | | | |
|----|---------------|------|-------|------|-------|-------|
| 25 | Gallia | 5.80 | 10.06 | 4.34 | 11792 | 14301 |
| 27 | Gallia | 6.98 | 9.03 | 5.21 | 11849 | 14413 |
| 28 | Gallia | 7.83 | 9.76 | 3.89 | 11779 | 14575 |
| 26 | Gallia | 6.73 | 13.03 | 4.37 | 11441 | 14614 |
| 23 | Athens | 5.78 | 8.00 | 4.19 | 12299 | 14618 |
| 24 | Athens | 6.60 | 10.20 | 3.41 | 11892 | 14560 |
| 24 | Athens | 4.51 | 11.49 | 4.88 | 11945 | 14553 |
| 22 | Morgan | 6.87 | 8.19 | 4.22 | 12100 | 14504 |
| 9 | Belmont | 2.79 | 9.42 | 5.09 | 12987 | 14134 |
| 11 | Belmont | 4.08 | 10.61 | 4.95 | 12476 | 14961 |
| 8 | Belmont | 2.91 | 8.00 | 4.31 | 13212 | 15099 |
| 3 | Belmont | 3.51 | 6.86 | 3.76 | 13185 | 14937 |
| 4 | Belmont | 3.80 | 8.95 | 4.27 | 12785 | 14933 |

TABLE 20.
UNIT COAL VALUES—(Continued).

| Number. | County. | Analyses of Coal as Received. | | | | "Unit Coal" Basis. |
|----------------------------|------------------|-------------------------------|-------|---------------|----------|--|
| | | Mois- ture. | Ash. | Sul- phur. | B. t. u. | B. t. u. — 5000 1.00 — (1.08 Ash + $\frac{S}{100}$) |
| PITTSBURGH OR NO. 8 COAL. | | | | | | |
| 7 | Belmont | 3.21 | 7.26 | 4.28 | 13135 | 14920 |
| 10 | Belmont | 4.47 | 11.01 | 4.67 | 12375 | 14976 |
| 6 | Belmont | 3.75 | 10.84 | 4.76 | 12357 | 14794 |
| 5 | Belmont | 4.46 | 10.76 | 4.45 | 12425 | 14977 |
| 1 | Belmont | 3.39 | 7.86 | 2.97 | 12991 | 14850 |
| 2 | Belmont | 3.79 | 9.00 | 4.16 | 12861 | 15027 |
| 6a | Belmont | 4.25 | 10.35 | 3.95 | 12425 | 14840 |
| 2a | Belmont | 4.23 | 9.21 | 4.17 | 12605 | 14842 |
| 12 | Jefferson | 3.10 | 9.52 | 3.83 | 12875 | 15008 |
| 15 | Jefferson | 3.13 | 8.22 | 4.02 | 13019 | 14943 |
| 15a | Jefferson | 4.57 | 9.00 | 1.55 | 12789 | 14980 |
| 18 | Harrison | 6.54 | 6.74 | 2.19 | 12710 | 14829 |
| 21 | Harrison | 5.98 | 5.97 | 1.35 | 12964 | 14853 |
| 20 | Harrison | 3.83 | 10.88 | 4.38 | 12355 | 14798 |
| 16 | Jefferson | 4.89 | 10.46 | 4.09 | 12515 | 15095 |
| 13 | Jefferson | 4.96 | 6.45 | 1.75 | 13099 | 14938 |
| 19 | Jefferson | 4.18 | 8.22 | 2.83 | 12888 | 14928 |
| 14 | Jefferson | 4.30 | 7.88 | 3.01 | 12859 | 14858 |
| 17 | Jefferson | 5.05 | 7.95 | 2.61 | 12865 | 14995 |
| Average | | 4.70 | 9.10 | 3.81 | 12559 | 14835 |
| POMEROY OR NO. 8a COAL. | | | | | | |
| 34 | Gallia | 8.21 | 11.46 | 2.18 | 11497 | 14561 |
| 33 | Meigs | 4.85 | 12.52 | 2.94 | 11923 | 14718 |
| 29 | Meigs | 7.33 | 8.69 | 2.05 | 12105 | 14608 |
| 30 | Meigs | 7.22 | 9.29 | 1.32 | 12002 | 14552 |
| 31 | Meigs | 5.51 | 10.58 | 4.17 | 11990 | 14588 |
| 32 | Meigs | 7.63 | 10.93 | 1.83 | 11722 | 14618 |
| Average | | 6.79 | 10.58 | 2.42 | 11873 | 14608 |
| MEIGS CREEK OR NO. 9 COAL. | | | | | | |
| 53 | Washington | 2.95 | 12.89 | 5.55 | 12245 | 14946 |
| 52 | Washington | 3.40 | 9.58 | 5.03 | 12749 | 14970 |
| 44 | Noble | 3.06 | 12.33 | 6.00 | 12357 | 15011 |
| 45 | Noble | 2.90 | 10.16 | 4.27 | 12692 | 14895 |
| 43 | Noble | 2.55 | 11.41 | 5.79 | 12514 | 14918 |
| 42 | Noble | 3.12 | 12.85 | 5.60 | 12130 | 14827 |
| 50 | Morgan | 5.13 | 11.74 | 4.89 | 11925 | 15270 |
| 48 | Morgan | 5.05 | 10.37 | 4.30 | 12114 | 14621 |
| 49 | Morgan | 4.07 | 10.66 | 5.07 | 12202 | 14637 |
| 47 | Noble | 3.54 | 13.23 | 6.21 | 11956 | 14787 |
| 46 | Noble | 4.85 | 9.82 | 5.59 | 12301 | 14757 |
| 37 | Belmont | 4.47 | 13.07 | 3.27 | 12002 | 14870 |
| 40 | Belmont | 3.40 | 14.94 | 4.39 | 11840 | 14890 |
| 41 | Belmont | 3.52 | 11.84 | 3.67 | 12391 | 14947 |
| 39 | Belmont | 4.17 | 9.60 | 3.11 | 12602 | 14863 |

TABLE 20.
UNIT COAL VALUES—(Concluded).

| Number, | County. | Analyses of Coal as Received. | | | | "Unit Coal" Basis. |
|--------------------------------------|----------------|-------------------------------|-------|---------------|----------|--|
| | | Mois- ture. | Ash. | Sul- phur. | B. t. u. | B. t. u. — 5000 S |
| | | | | | | 1.00 — (1.08 Ash + ²² / ₁₀₀ S.) |
| MEIGS CREEK OR NO. 9 COAL—Concluded. | | | | | | |
| 38 | Belmont | 4.31 | 11.68 | 1.94 | 12307 | 14888 |
| 36 _a | Belmont | 7.52 | 11.24 | 2.11 | 11860 | 14846 |
| 36 | Belmont | 4.98 | 12.82 | 2.41 | 11974 | 14846 |
| 35 | Harrison | 5.35 | 10.29 | 2.20 | 12393 | 14919 |
| | Average | 4.11 | 11.60 | 4.28 | 12240 | 14845 |



APPOINTMENTS

CHIEF INSPECTORS APPOINTED SINCE THE CREATION OF THE DEPARTMENT.

| Name of Inspector. | County. | Governor by whom appointed. | Term began. | Term expired. | Time served. | Remarks. |
|----------------------------|---------------|-----------------------------|----------------|----------------|----------------|--------------------------|
| Andrew Roy, D..... | Trumbull..... | Wm. Allen, D..... | April 6, 1874 | April 6, 1878 | 4 years..... | Resigned. |
| Jas. D. Poston, D..... | Hocking..... | R. M. Bishop, D..... | April 6, 1878 | Nov. 15, 1879 | 1 yr. 7 mo.... | Not confirmed by Senate. |
| David Owens, D..... | Trumbull..... | R. M. Bishop, D..... | Nov. 16, 1879 | Feb. 12, 1880 | 3 months..... | Resigned. |
| Andrew Roy, R..... | Jackson..... | Chas. Foster, R..... | Feb. 12, 1880 | Feb. 16, 1884 | 4 years..... | Resigned. |
| Thos. B. Bancroft, D..... | Gallia..... | Geo. Hoadley, D..... | Feb. 16, 1884 | April 1, 1888 | 4 yrs. 1½ mo.. | Reappointed. |
| Robt. M. Haseltine, R..... | Mahoning..... | Joseph B. Foraker, R..... | April 1, 1888 | April 30, 1888 | 1 month..... | Reappointed. |
| Robt. M. Haseltine, R..... | Mahoning..... | Joseph B. Foraker, R..... | May 1, 1888 | April 30, 1892 | 4 years..... | Reappointed. |
| Robt. M. Haseltine, R..... | Mahoning..... | Wm. McKinley, Jr., R..... | May 1, 1892 | April 30, 1896 | 4 years..... | Resigned. |
| Elmer G. Biddison, R..... | Athens..... | Asa S. Bushnell, R..... | May 1, 1896 | April 30, 1900 | 4 years..... | Reappointed. |
| George Harrison, R..... | Jackson..... | George K. Nash, R..... | May 1, 1900 | April 30, 1904 | 4 years..... | Incumbent. |
| | | Myron T. Herriek, R..... | May 1, 1904 | April 30, 1908 | 4 years..... | |
| | | Andrew L. Harris, R..... | April 30, 1908 | April 30, 1912 | ..... |  |

DISTRICT MINE INSPECTORS APPOINTED SINCE THE CREATION OF THE DEPARTMENT.

| Name of Inspector. | County. | Governor by whom Approved. | Chief Inspector by whom Appointed. | Term Began. | Term Expired. | Time Served. | Remarks. |
|-----------------------------|-----------------|----------------------------|------------------------------------|-------------|---------------|-----------------|-----------|
| Jacob P. Klein, R..... | Stark..... | Chas. Foster, R..... | Andrew Roy, R..... | 6-4-81 | 1-26-83 | 2 y, 7 m, 15 d | Resigned. |
| Jno. P. Williams, R..... | Trumbull..... | Chas. Foster, R..... | Andrew Roy, R..... | 1-26-83 | 2-16-84 | 1 y, 21 d..... | Resigned. |
| Austin P. King, Jr., D..... | Columbiana..... | Geo. Hoadley, D..... | Thos. Bancroft, D..... | 2-16-84 | 4-30-86 | 2 y, 2 m, 15 d | Resigned. |
| Wm. Dalrymple, D..... | Athens..... | Geo. Hoadley, D..... | Thos. Bancroft, D..... | 5-1-88 | 3-1-88 | 3 y, 10 m, 15 d | Resigned. |
| Wm. A. Davis, D..... | Guernsey..... | Geo. Hoadley, D..... | Thos. Bancroft, D..... | 5-1-84 | 2-15-86 | 1 y, 9 m, 15 d | Resigned. |
| Jos. L. Morris, R..... | Coshocton..... | Geo. Hoadley, D..... | Thos. Bancroft, D..... | 2-15-86 | 9-1-88 | 3 y, 2 m, 15 d | Resigned. |
| D. J. Harry, R..... | | Geo. Hoadley, D..... | Thos. Bancroft, D..... | 2-15-86 | 4-30-88 | ..... | Resigned. |
| | | Geo. Hoadley, D..... | R. M. Haseltine, R..... | 4-1-88 | ..... | ..... | Resigned. |

| NAME | DATE | PLACE | STATUS | REMARKS |
|-----------------------|---------|------------|-------------|---------|
| Jas. W. Haughee, R. | 4-30-91 | Athens | Reappointed | |
| Jas. W. Haughee, R. | 4-30-91 | Athens | Reappointed | |
| Robert Bell, R. | 6-28-92 | Stark | Reappointed | |
| Robert Bell, R. | 4-30-87 | Stark | Reappointed | |
| Robert Bell, R. | 8-11-90 | Stark | Reappointed | |
| Ebenezer Lewis, D. | 4-30-91 | Summit | Reappointed | |
| Ebenezer Lewis, D. | 4-30-94 | Summit | Reappointed | |
| Thos. H. Love, R. | 8-1-91 | Carroll | Reappointed | |
| Thos. H. Love, R. | 4-30-94 | Carroll | Reappointed | |
| Thos. H. Love, R. | 7-15-92 | Carroll | Reappointed | |
| Wm. B. Rennie, R. | 2-15-98 | Tuscarawas | Reappointed | |
| Jno. E. Short, D. | 8-1-91 | Hocking | Reappointed | |
| A. P. McDonald, D. | 5-1-91 | Perry | Reappointed | |
| Wm. H. Turner, R. | 7-15-92 | Perry | Reappointed | |
| Robt. H. Miller, R. | 5-1-91 | Perry | Reappointed | |
| Robt. H. Miller, R. | 5-1-91 | Perry | Reappointed | |
| Alex. Beattie, R. | 5-1-91 | Athens | Reappointed | |
| Jno. P. Jones, R. | 7-15-92 | Stark | Reappointed | |
| Jno. P. Jones, R. | 7-15-92 | Stark | Reappointed | |
| Sam'l Llewellyn, R. | 5-21-97 | Jackson | Reappointed | |
| Sam'l Llewellyn, R. | 5-21-97 | Jackson | Reappointed | |
| Thos. McGough, R. | 5-1-97 | Belmont | Reappointed | |
| Thos. McGough, R. | 5-1-97 | Belmont | Reappointed | |
| Thos. McGough, R. | 6-1-00 | Belmont | Reappointed | |
| Thos. McGough, R. | 6-1-00 | Belmont | Reappointed | |
| Thos. McGough, R. | 5-1-03 | Belmont | Reappointed | |
| Thos. McGough, R. | 5-1-06 | Belmont | Reappointed | |
| Ebenezer Jones, R. | 9-15-06 | Jefferson | Reappointed | |
| L. D. Devore, D. | 4-30-12 | Belmont | Reappointed | |
| Rees T. Davis, R. | 4-30-12 | Columbiana | Reappointed | |
| Rees T. Davis, R. | 4-30-12 | Columbiana | Reappointed | |
| Wm. K. Moore, R. | 4-30-12 | Stark | Reappointed | |
| Wm. K. Moore, R. | 4-30-12 | Stark | Reappointed | |
| Jas. P. Davis, R. | 4-30-12 | Carroll | Reappointed | |
| Jas. P. Davis, R. | 4-30-12 | Carroll | Reappointed | |
| Jas. P. Davis, R. | 4-30-12 | Carroll | Reappointed | |
| Thos. M. Morrison, R. | 4-30-12 | Carroll | Reappointed | |
| J. W. Hull, R. | 4-30-12 | Athens | Reappointed | |
| Jos. B. Foraker, R. | 5-1-88 | Stark | Reappointed | |
| Jos. B. Foraker, R. | 5-1-88 | Stark | Reappointed | |
| Wm. McKinley, R. | 6-17-92 | Stark | Reappointed | |
| Jos. B. Foraker, R. | 5-8-86 | Stark | Reappointed | |
| Jos. B. Foraker, R. | 5-1-87 | Stark | Reappointed | |
| Jos. B. Foraker, R. | 5-1-88 | Stark | Reappointed | |
| Jas. E. Campbell, D. | 8-11-90 | Summit | Reappointed | |
| Jas. E. Campbell, D. | 4-30-94 | Summit | Reappointed | |
| Jos. B. Foraker, R. | 5-1-91 | Carroll | Reappointed | |
| Wm. McKinley, R. | 7-15-92 | Carroll | Reappointed | |
| Wm. McKinley, R. | 5-1-94 | Carroll | Reappointed | |
| Jas. E. Campbell, D. | 8-1-91 | Tuscarawas | Reappointed | |
| Jas. E. Campbell, D. | 5-1-91 | Hocking | Reappointed | |
| Jas. E. Campbell, D. | 5-1-91 | Perry | Reappointed | |
| Jas. E. Campbell, D. | 5-1-91 | Perry | Reappointed | |
| Wm. McKinley, R. | 7-15-92 | Perry | Reappointed | |
| Wm. McKinley, R. | 5-1-94 | Perry | Reappointed | |
| Wm. McKinley, R. | 7-15-92 | Athens | Reappointed | |
| Wm. McKinley, R. | 7-15-92 | Athens | Reappointed | |
| Wm. McKinley, R. | 7-15-92 | Stark | Reappointed | |
| Wm. McKinley, R. | 7-15-92 | Stark | Reappointed | |
| Wm. McKinley, R. | 5-21-97 | Jackson | Reappointed | |
| Wm. McKinley, R. | 5-21-97 | Jackson | Reappointed | |
| Asa S. Bushnell, R. | 5-1-94 | Belmont | Reappointed | |
| Asa S. Bushnell, R. | 5-1-94 | Belmont | Reappointed | |
| Geo. K. Nash, R. | 6-1-00 | Belmont | Reappointed | |
| Geo. K. Nash, R. | 6-1-00 | Belmont | Reappointed | |
| Myron T. Herriek, R. | 5-1-06 | Belmont | Reappointed | |
| Andrew L. Harris, R. | 9-15-06 | Jefferson | Reappointed | |
| Judson Harmon, D. | 4-30-12 | Belmont | Reappointed | |
| Wm. McKinley, R. | 4-30-12 | Columbiana | Reappointed | |
| Asa S. Bushnell, R. | 4-30-12 | Columbiana | Reappointed | |
| Asa S. Bushnell, R. | 4-30-12 | Stark | Reappointed | |
| Asa S. Bushnell, R. | 4-30-12 | Stark | Reappointed | |
| Geo. K. Nash, R. | 4-30-12 | Carroll | Reappointed | |
| Geo. K. Nash, R. | 4-30-12 | Carroll | Reappointed | |
| Andrew L. Harris, R. | 4-30-12 | Carroll | Reappointed | |
| Asa S. Bushnell, R. | 4-30-12 | Athens | Reappointed | |

DISTRICT MINE INSPECTORS APPOINTED SINCE THE CREATION OF THE DEPARTMENT—Continued.

| Name of Inspector. | County. | Governor by whom Appointed. | Chief Inspector by whom Appointed. | Term Began. | Term Expired. | Term Served. | Remarks. |
|-----------------------|-------------|-----------------------------|------------------------------------|-------------|---------------|-----------------|-------------|
| David H. Williams, R. | Athens. | Asa S. Bushnell, R. | R. M. Haseltine... | 7-15-99 | 7-15-01 | 2 y | Reappointed |
| David H. Williams, R. | Athens. | Geo. K. Nash, R. | E. G. Biddison... | 7-15-01 | 7-15-04 | 3 y | Reappointed |
| David H. Williams, R. | Athens. | Myron T. Herrick, R. | Geo. Harrison... | 7-16-04 | 7-15-07 | 9 m, 29 d | Resigned |
| Lucius Hull, R. | Athens. | Myron T. Herrick, R. | Geo. Harrison... | 6-1-04 | 4-30-06 | 6 m, 23 d | Resigned |
| Jno. T. Dolan, R. | Hocking. | Myron T. Herrick, R. | Geo. Harrison... | 1-24-05 | 4-30-06 | 1 m, 22 d | Resigned |
| Jas. Pritchard, R. | Perry. | Myron T. Herrick, R. | Geo. Harrison... | 3-17-05 | 4-30-06 | 1 y, 1 m, 14 d | Reappointed |
| Jas. Pritchard, R. | Perry. | Andrew L. Harris, R. | Geo. Harrison... | 4-30-06 | 4-30-09 | 3 y | Reappointed |
| Jas. Pritchard, R. | Perry. | Andrew L. Harris, R. | Geo. Harrison... | 4-30-03 | 7-31-08 | 2 y, 3 m, 1 d | Resigned |
| W. C. Wiper, R. | Perry. | Andrew L. Harris, R. | Geo. Harrison... | 8-1-03 | 6-30-09 | 11 mos. | Incumbent |
| Isaac Hill. | Marion. | Judson Harmon, D. | Geo. Harrison... | 7-1-09 | 6-30-12 | 3 y | Reappointed |
| David B. Wilson, R. | Perry. | Asa S. Bushnell, R. | R. M. Haseltine... | 7-15-98 | 6-30-00 | 1 y, 10 m, 15 d | Resigned |
| David B. Wilson, R. | Perry. | Geo. K. Nash, R. | E. G. Biddison... | 6-1-00 | 6-9-03 | 3 y, 9 d | Reappointed |
| R. M. Mason, R. | Hocking. | Geo. K. Nash, R. | E. G. Biddison... | 6-19-00 | 4-30-03 | 2 y, 11 m, 11 d | Resigned |
| R. M. Mason, R. | Hocking. | Geo. K. Nash, R. | E. G. Biddison... | 5-1-03 | 8-15-03 | 3 m, 15 d | Resigned |
| W. H. Turner, R. | Guernsey. | Geo. K. Nash, R. | E. G. Biddison... | 6-1-00 | 4-30-03 | 2 y, 11 m | Reappointed |
| W. H. Turner, R. | Guernsey. | Geo. K. Nash, R. | E. G. Biddison... | 5-1-03 | 4-30-06 | 3 y | Reappointed |
| W. H. Turner, R. | Guernsey. | Andrew L. Harris, R. | Geo. Harrison... | 4-30-06 | 4-30-09 | 3 y | Incumbent |
| W. H. Miller, R. | Stark. | Geo. K. Nash, R. | E. G. Biddison... | 7-1-00 | 7-15-01 | 1 y, 15 d | Reappointed |
| W. H. Miller, R. | Stark. | Geo. K. Nash, R. | E. G. Biddison... | 7-15-01 | 7-15-04 | 3 y | Reappointed |
| W. H. Miller, R. | Stark. | Myron T. Herrick, R. | Geo. Harrison... | 7-15-04 | 7-15-07 | 3 y | Reappointed |
| W. H. Miller, R. | Stark. | Andrew L. Harris, R. | Geo. Harrison... | 7-15-07 | 7-15-10 | 10 m, 24 d | Reappointed |
| W. H. Miller, R. | Stark. | Andrew L. Harris, R. | Geo. Harrison... | 6-1-08 | 4-30-11 | 3 y | Incumbent |
| John Winefordner, R. | Muskingum. | Geo. K. Nash, R. | E. G. Biddison... | 6-9-03 | 4-30-06 | 11 m, 22 d | Resigned |
| Ed. S. Smith, R. | Hocking. | Geo. K. Nash, R. | E. G. Biddison... | 8-15-03 | 4-30-06 | 9 m, 16 d | Resigned |
| Thos. Waters, R. | Jackson. | Myron T. Herrick, R. | Geo. Harrison... | 6-1-04 | 4-30-06 | 1 y, 11 mo. | Reappointed |
| Thos. Waters, R. | Jackson. | Myron T. Herrick, R. | Geo. Harrison... | 6-1-06 | 4-30-09 | 3 y | Reappointed |
| Thos. Waters, R. | Jackson. | Myron T. Herrick, R. | Geo. Harrison... | 4-30-09 | 7-31-09 | 3 m, 1 d | Held over |
| Jno. L. McDonald, R. | Athens. | Andrew L. Harris, R. | Geo. Harrison... | 4-30-06 | 4-30-09 | 3 y | Incumbent |
| Jno. L. McDonald, R. | Athens. | Andrew L. Harris, R. | Geo. Harrison... | 7-15-07 | 7-15-10 | 10 m, 24 d | Reappointed |
| Jno. L. McDonald, R. | Athens. | Andrew L. Harris, R. | Geo. Harrison... | 6-1-08 | 4-30-11 | 3 y | Incumbent |
| Alex. Smith, R. | Tuscarawas. | Andrew L. Harris, R. | Geo. Harrison... | 6-1-08 | 4-30-11 | 3 y | Add'l Insp. |
| Lot Jenkins, R. | Belmont. | Andrew L. Harris, R. | Geo. Harrison... | 6-1-08 | 4-30-11 | 3 y | Add'l Insp. |
| Edw. Kennedy | Belmont. | Judson Harmon, D. | Geo. Harrison... | 6-1-08 | 4-30-11 | 3 y | Add'l Insp. |

DISTRICTS

INSPECTORS AND DISTRICTS INTO WHICH THE STATE IS DIVIDED, 1909.

GEO. HARRISON,

Chief Inspector of Mines, Wellston, Ohio.

FIRST DISTRICT.

Composed of the Counties of Jackson, Lawrence, Scioto and a portion of both Vinton and Gallia.

THOS. WATERS, INSPECTOR,

Wellston, Jackson County, Ohio.

Succeeded August 1st, 1909, by

JOHN BURKE, Wellston, Jackson County, Ohio.

SECOND DISTRICT.

Composed of the Counties of Hocking and Meigs, and a portion of both Vinton and Gallia.

EDW. KENNEDY, INSPECTOR,

Carbon Hill, Hocking County, Ohio.

THIRD DISTRICT.

Composed of Athens County.

JNO. L. McDONALD, INSPECTOR,

Glouster, Athens County, Ohio.

FOURTH DISTRICT.

Composed of the Counties of Perry, Muskingum and Morgan.

WM. C. WIPER, INSPECTOR,

Malta, Morgan County, Ohio.

Succeeded July 1st, 1909, by

ISAAC HILL, INSPECTOR,

Zanesville, Muskingum County, Ohio.

FIFTH DISTRICT.

Composed of the Counties of Guernsey, Noble and Washington, and the Cochran and Media Mines, Belmont County.

W. H. TURNER, INSPECTOR,
Cambridge, Guernsey County, Ohio.

SIXTH DISTRICT.

Composed of the Counties of Tuscarawas, Coshocton and Columbiana.

ALEX. SMITH, INSPECTOR,
New Philadelphia, Tuscarawas County, Ohio.

SEVENTH DISTRICT.

Composed of the Counties of Holmes, Mahoning, Medina, Ottawa, Portage, Stark, Summit, Trumbull and Wayne.

W. H. MILLER, INSPECTOR,
R. D. No. 1, Massillon, Stark County, Ohio.

EIGHTH DISTRICT.

Composed of a portion of Belmont County.

LOT JENKINS, INSPECTOR,
No. 4777 Jefferson St., Bellaire, Belmont Co., O.

NINTH DISTRICT.

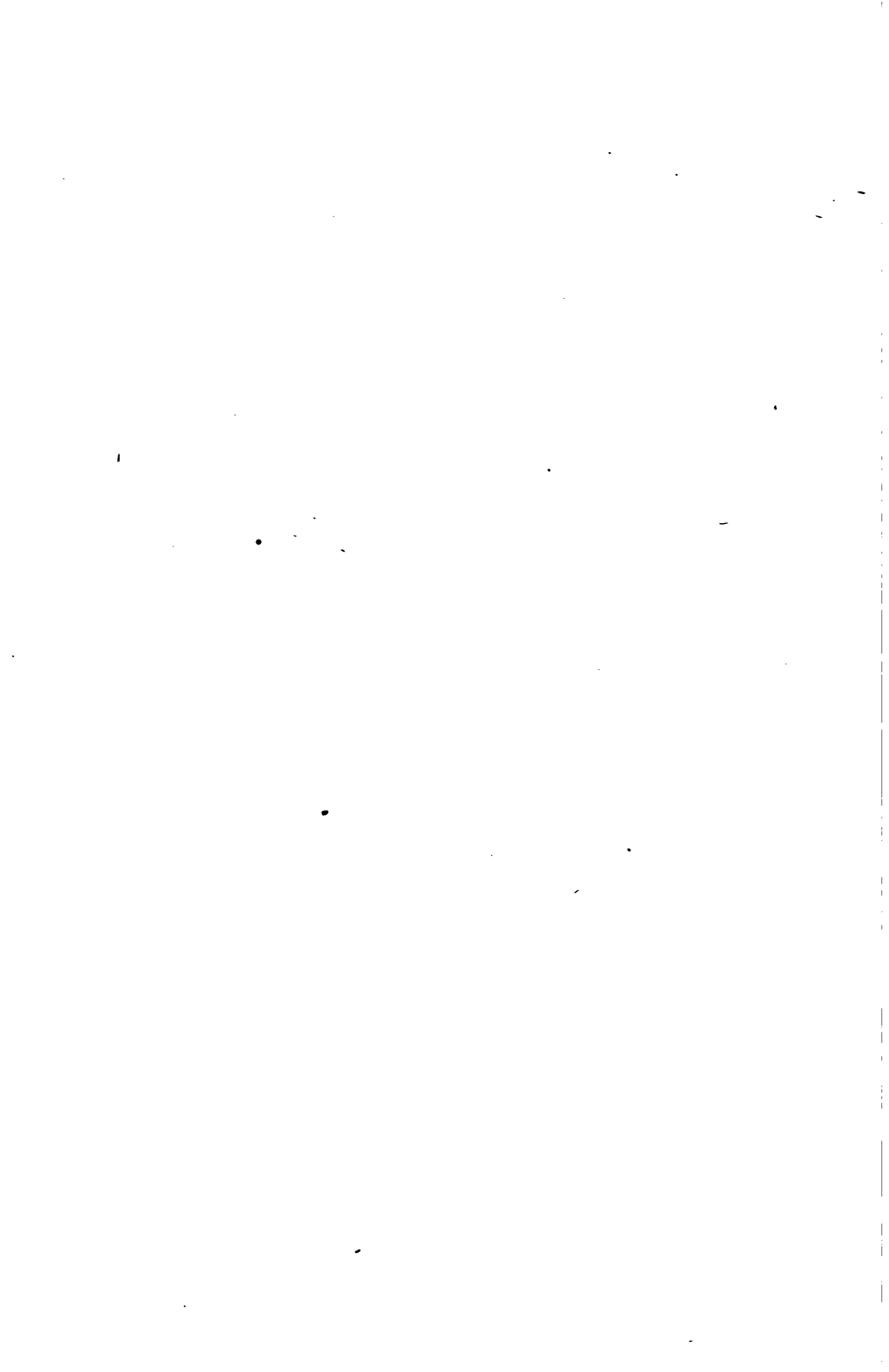
Composed of the Counties of Carroll, Harrison and portion of Jefferson.

THOS. MORRISON, INSPECTOR,
Sherodsville, Carroll County, Ohio.

TENTH DISTRICT.

Composed of a portion of both Belmont and Jefferson Counties.

EBENEZER JONES, INSPECTOR,
Martins Ferry, Belmont County, Ohio.
Succeeded May 1st, 1909, by
L. D. DEVORE, INSPECTOR,
Bellaire, Belmont County, Ohio.



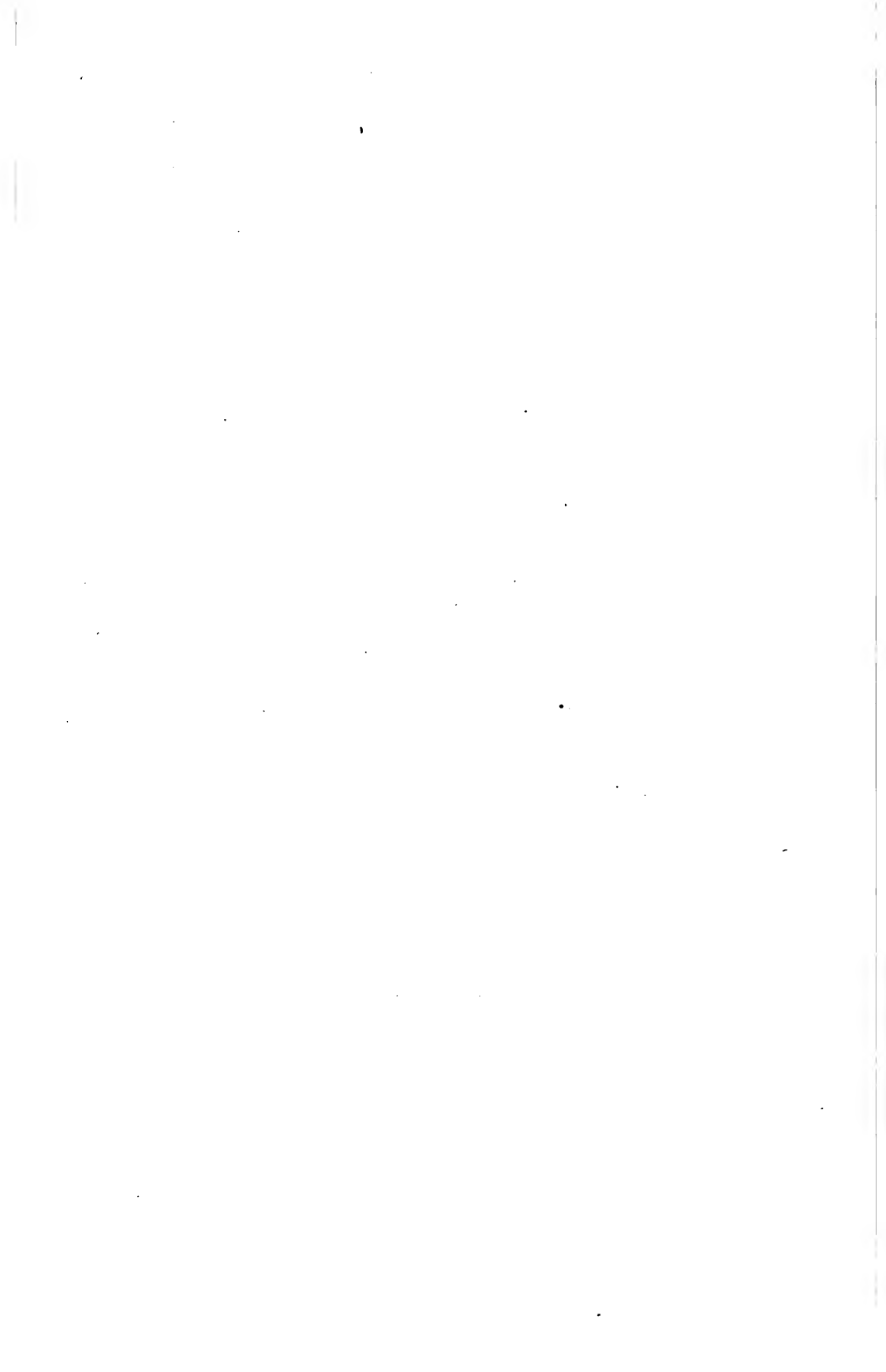
INSPECTIONS

TABLE SHOWING NUMBER OF VISITS TO MINES MADE BY THE CHIEF INSPECTOR AND DISTRICT INSPECTORS IN THE VARIOUS COUNTIES OF THE STATE FROM JANUARY 1, 1909, TO DECEMBER 31, 1909, INCLUSIVE.

| Counties. | 1st Dist.—Waters. | 1st Dist.—Burke. | 2nd Dist.—Kennedy. | 3rd Dist.—McDonald. | 4th Dist.—Wiper. | 4th Dist.—Hill. | 5th Dist.—Turner. | 6th Dist.—Smith. | 7th Dist.—Miller. | 8th Dist.—Jenkins. | 9th Dist.—Morrison. | 10th Dist.—Jones. | 10th Dist.—Devore. | Chief Inspector Harrison. | Total. |
|------------------|-------------------|------------------|--------------------|---------------------|------------------|-----------------|-------------------|------------------|-------------------|--------------------|---------------------|-------------------|--------------------|---------------------------|--------|
| Athens | | | | 206 | | | | | | | | | | 6 | 212 |
| Belmont | | | | | | | 6 | | 1 | 196 | 1 | 12 | 78 | 6 | 300 |
| Carroll | | | | | | | | 70 | 4 | | 50 | | | | 50 |
| Columbiana | | | | | | | | 51 | | | 6 | | 1 | 2 | 83 |
| Coshocton | | | | | | | | | | | | | | 1 | 52 |
| Gallia | | | 8 | | | | | | | | | | | | 8 |
| Guernsey | | | | | 4 | 162 | | | | 1 | | | 1 | 4 | 172 |
| Harrison | | | | | | | | | | | 28 | | | | 28 |
| Hocking | | | 203 | 8 | | | | | | | | | | 4 | 215 |
| Holmes | | | | | | | | | 7 | | | | | | 7 |
| Jackson | 73 | 85 | | | | | | | | | | | | | 160 |
| Jefferson | | | | | | | | 1 | 2 | 1 | 135 | 51 | 91 | 3 | 284 |
| Lawrence | 21 | 33 | | | | | | | | | | | | | 54 |
| Mahoning | | | | | | | | | 21 | | | | | | 21 |
| Medina | | | | | | | | | 16 | | | | | | 16 |
| Meigs | | | 89 | | | | | | | | | | | 1 | 90 |
| Morgan | | | | | 4 | 7 | | | | | | | | | 11 |
| Muskingum | | | | | 20 | 54 | | | | | | | | 1 | 75 |
| Noble | | | | | | 1 | 28 | | | | | | | | 29 |
| Ottawa | | | | | | | | | 20 | | 4 | | | 4 | 28 |
| Perry | | | | | 86 | 91 | | | | | | | | | 177 |
| Portage | | | | | | | | | 17 | | | | | | 17 |
| Scioto | 8 | 6 | | | | | | | | | | | | | 14 |
| Stark | | | | | | | | 1 | 130 | | | | | 2 | 133 |
| Summit | | | | | | | | | 11 | | | | | | 11 |
| Tuscarawas | | | | | | | | 142 | | | | | | 4 | 146 |
| Vinton | 6 | 4 | 37 | | | | | | 2 | | | | | | 49 |
| Wayne | | | | | | | | | 29 | | | | | | 29 |
| Total .. | 108 | 128 | 337 | 214 | 110 | 157 | 196 | 265 | 260 | 198 | 224 | 63 | 171 | 40 | 2,471 |

Note:—One hundred and sixty-five days (165), 68 during 1908, 87 during 1909, and 10 during the first part of 1910, were spent by the Chief Inspector meeting with the Mining Commission of which he was Chairman; one week was also spent at Cherry, Illinois, during the second week of November rendering such assistance as was possible under the circumstances.

REPORT OF DISTRICT MINE INSPECTORS



FIRST DISTRICT

JOHN BURKE.

COMPOSED OF THE COUNTIES OF JACKSON, LAWRENCE, SCIOTO AND A
PORTION OF VINTON COUNTY.

HON. GEO. HARRISON, *Chief Inspector of Mines, Columbus, Ohio.*

DEAR SIR:—In compliance with the mining laws, I herewith submit to you my first annual report of the First Mining District, from August 1, 1909, the date of my appointment, to December 31, 1909, both dates inclusive.

During the year 14 permanent improvements have been made, consisting of 1 fan, 1 furnace, 6 second openings, 4 air shafts and 2 stairways. Four sets of weigh scales have been tested; 3 were correct, 1 incorrect. Six mines have been abandoned during the year, 10 suspended and 3 new openings have been made.

I regret to report three deaths in the mines, all of which occurred in Jackson county; two were killed by falls of slate, the other was found dead in the mine, death resulting from natural causes.

In conclusion, I desire to thank you and the other members of the mining department for courtesies, information and advice given.

I also wish to thank Mr. Thos. Waters, the former district inspector, who assisted me in many ways.

Very respectfully yours,

JOHN BURKE, Wellston, O.,
Inspector First District.

December 31, 1909.

JACKSON COUNTY.

The following mines are owned and operated by the Superior Coal Co., Jackson, Ohio. Samuel H. Wilson, Wellston, Ohio, General Superintendent.

Superior No. 1.

Located near Wellston, on D., T. & I. Ry. Evan A. Thomas, Coalton, O., mine boss. Shaft opening, 100 feet deep; No. 2 seam of coal, 3 feet thick. Double entry system, fan ventilation, employs 30 miners and 16 day hands. Visited September 18th and December 22nd. Found in fair condition. On second visit requested breakthrough on 6th right entry cleaned out, and loose slate on main haulway taken down.

Superior No. 3.

Located near Wellston, on B. & O. Ry. Geo. Eberts, Wellston, O., mine boss. Shaft, 47 feet deep, No. 2 seam, 3 feet thick. Double entry system, fan ventilation, employs 80 miners and 44 day hands. Five visits made. August 10th requested that curtains on cutoffs on 3rd and 4th east entries be replaced with doors, and breakthroughs on 5th west entry cleaned out. August 18th, tested scales and found correct. October 11th, found curtains on 3rd and 4th east entries replaced with doors; requested breakthroughs on 4th east and 5th and 6th west entries cleaned out. December 27th, was unable to secure a measurement of air on 4th east entry; requested the mine boss to remove men from this entry, open up breakthroughs, repair brattices and erect a door. December 28th, found improved conditions on 4th east entry.

Superior No. 4.

Located near Wellston. Virgil Callahan, Coalton, O., mine boss. Shaft, 84 feet deep, No. 2 seam of coal, 32 inches thick; double entry system, fan ventilation; employs 73 miners and 35 day hands. Two inspections made. Visited September 10th. Mine had just started to work after having been idle for nine months. Ventilation was weak on 2nd east and south entries. Roads were in bad condition from mud and water. November 20th, in fair condition; requested check door erected on 3rd east entry. A fan has been installed at the Meadow Run opening, which improves the ventilation.

Superior No. 9.

Located three miles southeast of Wellston, on C., H. & D. Ry. Chas. G. May, Wellston, O., mine boss. Shaft opening, 150 feet deep; No. 2 seam of coal, 3½ feet thick; double entry system, fan ventilation, pick and machine mining; employs 80 pick miners, 40 loaders, 6 machine runners and 55 day men. Four inspections made. Visited August 17th, in fair condition. November 8th and 9th on north, found fair current of air on entries, but weak in working places; requested check doors or curtains put up. December 20th, found south side of mine in fair condition; several brattices were leaking on north side; requested same repaired. December 24th, brattices repaired as requested, and good current of air passing through all working places. Requested that the fire boss comply with the mining laws n making examination of mine.

Superior No. 12.

Located on D., T. & I. Ry., three miles east of Wellston. Jas. Duane, R. D. No. 2, Wellston, O., mine boss. Shaft, 155 feet deep, No. 2 seam of coal, 32 inches thick. Double entry system, fan ventilation; employs 20 loaders, 4 machine runners and 18 day hands. Visited October 15th; ventilation poor in working places. Requested check doors erected. November 27th, requested new timbers put up on side track at bottom of the shaft; also that loose slate on south entry be timbered or taken down.

Wellston Colliery.

Located two miles east of Wellston, transportation C., H. & D. Ry. Operated by the Wellston Colliery Co., Wellston, O. W. S. McCloud, Wellston, O., superintendent; Henry Shires, same place, mine boss. Shaft, 98 feet deep; No. 2 seam of coal, 3½ feet thick. Double entry system, fan ventilation, pick and machine mining; employs 44 pick miners, 40 loaders, 6 machine runners and 38 day hands. Three inspections made. August 7th, found in good condition. September 15th, in good condition. No regulation in regard to shot firing was in force by the pick miners. Requested that a system of shooting be put in operation, the miners to fire their shots in turn. November 3rd, found powder being taken in the mine while the power was on the wires. Requested power shut off when delivering powder. Found dynamite stored in the mine; had it removed immediately. Mine in good condition.

D. C. & I. No. 2.

Located at Wellston, transportation B. & O. Ry. Operated by the Dayton Coal & Iron Co., Wellston, O. Herbert Poore, Wellston, O., superintendent; Robt. Pope, same place, mine boss. Shaft, 53 feet deep, No. 2 seam of coal, 3½ feet thick; double entry system, fan ventilation, pick and machine mining; employs 10 pick miners, 36 loaders, 6 machine runners and 22 day hands. Visited August 4th. Mine in good condition.

D. C. & I. No. 3.

Located at Wellston, transportation C., H. & D. Ry. Operated by Dayton Coal & Iron Co., Wellston, O. Herbert Poore, Wellston, O., superintendent; Robert Pope, same place, mine boss. Shaft, 85 feet deep; No. 2 seam of coal, 4 feet thick. Double entry system, fan ventilation; employs 14 miners and 9 day hands. Visited October 29th, mine in good condition.

Domestic.

Located two miles east of Wellston, on D., T. & I. Ry. Operated by the Domestic Coal Co., Wellston, O. H. A. Goddard, Wellston, superintendent; Cal Littlejohn, same place, mine boss. Shaft, 97 feet deep; No. 2 seam of coal, 3 feet 4 inches thick. Double entry system, fan ventilation; employs 1 pick miner, 65 loaders, 12 machine runners and 42 day hands. Visited August 5th; mine in fair condition. August 23rd, requested covering placed on the cage, also mud removed from the road between the main entry and the bottom of the slope; otherwise mine in fair condition. October 31st, visited in company with Chief Inspector of Mines Geo. Harrison, to investigate the death of John Price.

the fire boss, who was found dead in this mine on the morning of the 27th of October. November 4th, requested loose slate taken down or timbered on 4th right entry, also requested the fire boss to comply with the mining laws in making examination of mine. Ordered the "bug dust," which was used as ballast in the road, taken out of the mine. November 6th, found former order in regard to removing dust complied with.

Tom Corwin No. 1.

Located near Glen Roy, on the C., H. & D. Ry. Operated by the Tom Corwin Coal Co., Dayton, O. E. J. Harper, Glen Roy, superintendent; David R. Welsh, same place, mine boss. Shaft, 105 feet deep; No. 2 seam of coal, 3 feet thick; double entry system, fan ventilation; employs 28 miners and 12 day hands. Visited September 21st, mine in poor condition. Requested that safety holes be made on north motor line, also loose slate taken down, or timbered. November 29th, found black-damp in the pillar workings on the north; requested the mine boss to remove the men, brattice off the black-damp and increase the volume of air through these places. December 4th, found improved conditions and a fair current of air passing through these places where the men had been requested removed on my former visit.

Emma No. 2.

Located at Glen Roy, operated by the Emma Coal Co., Jackson, O. Edwin Jones, same place, superintendent; John Rockwell, Glen Roy, O., mine boss. Shaft, 80 feet deep; No. 2 seam of coal, 3 feet thick; double entry system, fan ventilation. Employs 11 miners and 3 day hands. Visited September 13th, conditions poor. Ventilation was deficient, caused by main airway being nearly filled up with falls of slate and brattices leaking; requested ventilation increased. December 15th, the second left entry on the north was in an unsafe condition on account of bad top. Requested the assistant mine boss to remove the men from this entry until it was properly timbered. December 21st, found improved conditions. Tested the safety catches; they failed to work.

Emma No. 3.

Located on Springfield switch, D., T. & I. Ry. Operated by the Emma Coal Co., Jackson, O. Edwin Jones, Jackson, O., superintendent; J. D. Richards, same place, mine boss. Drift opening; No. 2 seam of coal, 3 feet thick; single entry system, furnace ventilation; employs 47 miners and 17 day hands. Mine in good condition.

Jones & Morgan No. 3.

Located near Glen Roy, transportation C., H. & D. and D., T. & I. Rys. Operated by the Jones & Morgan Coal Co., Jackson, O. Moses Morgan, Jackson, O., superintendent; D. R. Jones, same place, mine boss. Slope opening, 150 feet long; No. 2 seam of coal, 34 inches thick; single entry system, fan ventilation; pick and machine mining; employs 9 pick miners, 5 loaders, 2 machine runners and 9 day hands. Visited October 5th, found in good condition.

Acorn Slope.

Situated near Glen Roy, on C., H. & D. Ry. Operated by the Jones Coal Co., Jackson, O. E. T. Jones, Jackson, O., superintendent; M. M. Morgan, same place,

mine boss. Slope opening, 440 feet long; No. 2 seam of coal, 32 inches thick; double entry system, fan ventilation; employs 8 miners and 3 day hands. Visited August 6th, mine in poor condition. Found a working place, which was worked over the 60 foot limit, in advance of the air. Ordered same stopped until break-through was made.

Dewitt

Situated on D., T. & I. Ry., three miles east of Wellston. Operated by the Dewitt Coal Co., Wellston, O. Willard Dewitt has charge of the mine. Drift opening; No. 5 seam of coal, $3\frac{1}{2}$ feet thick; double entry system, furnace ventilation; employs 16 miners and 4 day hands. Visited August 11th. Mine was in good condition; requested a check door erected on north entry.

Following mines owned and operated by the Chapman Coal Co., Jackson, O. John E. Hayes, Chapman, O., general superintendent.

Springfield.

Located on Springfield switch, D., T. & I. Ry. W. J. Eisnagle, same place, mine boss. Shaft, 54 feet deep; No. 2 seam of coal, 3 feet thick; single entry system, fan ventilation, pick and machine mining; employs 10 pick miners, 18 loaders, 6 machine runners and 34 day hands. Visited August 30th, found idle. September 20th, mine in fair condition, except 3rd east entry on north, where the ventilation was deficient; requested doors and brattices repaired. September 23rd, found a current of air passing through the working places on 3rd east entry.

Chapman.

Situated near Chapman, on D., T. & I. Ry. Jacob Houser, same place, mine boss. Drift opening; No. 2 seam of coal, 32 inches thick; single entry system, fan ventilation; employs 10 miners and 2 day hands. Visited December 2nd, found in good condition.

Grace.

Located on Ada switch, transportation D., T. & I. Ry. Frank Pierpoint, Wellston, O., mine boss. Shaft, 100 feet deep; No. 2 seam of coal, 34 inches thick; single entry system, fan ventilation, pick and machine mining; employs 4 pick miners, 65 loaders, 10 machine runners and 31 day hands. Visited August 24th; requested manholes made along motor line on 2nd north entry. Mine was in good condition.

Rhodes & Sell.

Situated three miles west of Coalton, on C., H. & D. Ry. Operated by Rhodes & Sell Coal Co., Coalton, O. E. A. Rhodes, Coalton, superintendent; Jas. Rhodes, same place, mine boss. Drift, No. 2 seam of coal, 4 feet thick; single entry system, fan ventilation; employs 17 miners and 5 day hands. Visited November 15th. Ventilation was good. Haulway was in bad condition from mud and water. Found loose slate on entry; requested same taken down or timbered; also ordered stairway put in second opening. December 29th, found

stairway in second opening. The roads were in poor condition, and standing water at the face of several of the working places was found. Requested the roads put in good condition and water removed from the working places. Ventilation fair.

Sun.

Located three miles west of Jackson, on D., T. & I. Ry. Operated by the Sun Coal Co., Jackson, O. Wm. Rhodes, Jackson, O., superintendent; Chas. Booth, same place, mine boss. Drift opening; Jackson Hill seam of coal, 26 inches thick; single entry system, furnace ventilation; employs 40 miners and 14 day hands. Visited October 18th. Ventilation fair on all entries, with the exception of 1st east, where the air was deficient. Requested brattices and doors repaired and breakthroughs opened up. December 23rd mine found idle; no thorough inspection was made. Requested the dirt and boards which covered the entrance of the second opening removed.

Alma No. 2.

Located three miles east of Wellston, on D., T. & I. Ry. Operated by the Alma Coal Co., Wellston, O. W. P. Porter, Wellston, superintendent; Frank Craggs, same place, mine boss. Shaft, 124 feet deep; No. 2 seam of coal, 28 inches thick; double entry system, fan ventilation; employs 19 miners and 8 day hands. Visited August 9th and November 6th. On last visit requested the fire boss to comply with the mining laws in making examination of mine. Mine in good condition.

Northern.

Situated near Glenroy, on D., T. & I. Ry. Operated by the Northern Coal Mining Co., Jackson, O. Edwin Jones, Jackson, O., superintendent; John Rockwell, Glenroy, O., mine boss. Shaft, 40 feet deep; No. 2 seam of coal, 3 feet thick; single entry system, fan ventilation; employs 18 miners and 6 day hands. Visited September 16th. This mine is all pillar work; conditions fairly good.

Star Furnace.

Located near Jackson, on D., T. & I. Ry. Operated by the Star Furnace Co., Jackson, O. L. V. Brown, Jackson, O., superintendent; Jeff Whaley, same place, mine boss. Drift opening, No. 1 seam, 3 feet thick; double entry system, furnace ventilation; employs 30 miners and 20 day hands. Visited August 31st. Requested a breakthrough made between the two rooms next to the face of the 4th west entry and check door erected on entry. Mine in fair condition.

Price.

Located on Price's switch, D., T. & I. Ry. Operated by W. A. Gosline & Co., Toledo, O. J. C. Hurd, Jr., Jackson, O., superintendent; Arthur Mapes, R. D. No. 4, Jackson, O., mine boss. Drift opening, No. 2 seam of coal, 26 inches thick; single entry system, furnace ventilation; employs 41 miners and 14 day hands. Visited August 27th; found in fairly good condition; requested breakthroughs cleaned out on 1st left entry.

Harper.

Located on Ada switch, D., T. & I. Ry. Operated by the Harper Coal Co., Coalton, O. John E. Harper, Coalton, O., superintendent; J. C. Rowe, same

place, mine boss. Slope opening, 125 feet long, single entry system, fan ventilation; employs 34 miners and 11 day hands. Visited November 5th; found in fair condition. Requested stairway put in the shaft for the purpose of an escapement-way. December 16th, ventilation fair; requested loose slate taken down or timbered, and stairway placed within the shaft within five days.

Evans.

Located at Oak Hill, on B. & O. Ry. Operated by the Ward Coal Co., Oak Hill, O. Chas. Bowman, Oak Hill, superintendent; Geo. Darling, same place, mine boss. Drift opening, No. 5 seam of coal, $3\frac{1}{2}$ feet thick; single entry system, furnace ventilation; employs 14 miners and 5 day hands. Visited August 19th. Mine was in poor condition; requested a new escapement-way made. October 21st, ventilation fair; work on the escapement-way was making slow progress. Requested this place driven narrow, and completed as expeditiously as possible.

Globe.

Located near Jackson, on B. & O. Ry. Operated by the Globe Iron Co., Jackson, O. J. E. Jones, Jackson, superintendent; Ross L. Lewis, same place, mine boss. Shaft, 103 feet deep, No. 1 seam of coal, 3 feet 10 inches thick; double entry system, fan ventilation; machine mining; employs 28 loaders, 6 machine runners and 13 day hands. Visited September 22nd and December 14th; found in good condition. On last visit, requested the fire boss to comply with the mining law in making examination of mine.

Jackson Iron & Steel.

Located near Jackson, transportation D., T. & I. Ry. Operated by the Jackson Iron & Steel Co., Jackson, O. Daniel C. Jones, same place, superintendent and mine boss. Shaft, 50 feet deep, No. 1 seam of coal, 3 feet thick; double entry system, fan ventilation; employs 42 miners and 13 day hands. Mine in good condition. The wooden brattices on entries are being replaced with brick and cement stoppings.

Jackson & Decatur.

Located six miles west of Jackson, on D., T. & I. Ry. Operated by Jackson & Decatur Coal Co., Jackson, O. R. S. Campbell, Jackson, superintendent; Geo. Young, same place, mine boss. Drift, No. 1 seam of coal, 3 feet thick; single entry system, furnace ventilation; employs 18 miners and 7 day hands. Visited October 22nd; found old opening idle, no inspection made. New opening, fairly good condition.

Rowe.

Located at Coalton, on D., T. & I. Ry. Operated by Wm. Rowe, Coalton, O. Nick Maddox, same place, mine boss. Drift opening, No. 2 seam of coal, 32 inches thick. Single entry system; ventilated by fire basket; employs 17 miners and 4 day hands. Conditions fair.

Pastor.

Located near Lincoln Furnace, transportation D., T. & I. Ry. Operated by the Pastor Coal Co., Wellston, O. Robert Kirkley, Wellston, superintendent:

Chas. Newland, same place, mine boss. Drift opening, No. 4 seam of coal, 4 feet thick. Double entry system, fan ventilation; employs 21 miners and 4 day hands. Visited September 24th; ventilation was good. Requested loose slate taken down in second opening; also requested stairs placed in same. Tested scales and found correct. October 25th, found second opening not repaired as requested on former visit. Reduced the working force to ten men. October 27th, stairs were built in second opening, also loose slate taken down, making it available as an escapement-way.

Wills.

Located three miles west of Coalton on C., H. & D. Ry. Operated by the Evans Coal Co., Coalton, O. Edw. Evans, same place, superintendent; W. L. Rawlins, Byer, O., mine boss. Drift opening, No. 1 seam of coal, 3 feet thick; single entry system, furnace ventilation; employs 6 miners and 1 day hand. Visited November 15th; found in good condition.

Rempel.

Located near Limestone Furnace, transportation C., H. & D. Ry. Operated by the Jno. F. Hall Coal Co., Dayton, O. Murley Bates, Rempel, O., superintendent and mine boss. Drift opening, No. 4 seam of coal, 4 feet thick. Single entry system, furnace ventilation; employs 33 miners and 6 day hands. Visited October 1st; mine in good condition. Tested scales and found incorrect.

Lucy No. 3.

Located on Armstrong's switch, D., T. & I. Ry. Operated by the Armstrong Coal Co., Jackson, O. John Armstrong, Jackson, O., superintendent; Guss Smales, same place, mine boss. Drift opening, No. 2 seam of coal, 3 feet thick; single entry system, furnace ventilation; employs 22 miners and 8 day hands. Visited November 16th; found in fair condition. Requested that a fall of slate and dirt be removed from second opening and entrance timbered.

Commercial.

Located near Madison Furnace, transportation C., H. & D. Ry. Operated by C. W. Hammerstein, Coalton, O. P. C. White, R. D. No. 3, Jackson, O., superintendent and mine boss. Drift opening, No. 5 seam of coal, 3 feet thick; single entry system, furnace ventilation; employs 9 miners and 6 day hands. Visited December 3rd; found in fair condition. Ordered a supply of timber kept at mine; also ordered a second opening made.

Cochran.

Located six miles west of Jackson, on D., T. & I. Ry. Operated by the Cochran Coal Co., Jackson, O. A. J. Cochran, Jackson, superintendent; Walter Claar, R. D. No. 3, Jackson, mine boss. Drift opening, No. 1 seam of coal, 3 feet thick; single entry system, fan ventilation; employs 35 miners and 14 day hands. Ventilation fair. The airway on the south entry was filled up to some extent by falls of drawslate; requested it cleaned out.

Victor.

Located near Coalton, transportation C., H. & D. Ry. Operated by T. J. Evans, Coalton, O. Linn Freeman, same place, mine boss. Drift opening, No.

2 seam of coal, 26 inches thick; single entry system, natural ventilation; employs 14 miners and 1 day hand. Visited December 13th, conditions fair. Two working places in main opening were very poorly timbered, and no supply for immediate purposes. Ordered timber sent to those places at once.

Banchor No. 2.

Located three miles east of Wellston, on D., T. & I. Ry. Operated by J. H. Browne, Wellston, O. John Littlejohn, same place, mine boss. Drift opening, No. 4 seam of coal, 4 feet thick; double entry system, furnace ventilation; employs 39 miners and 12 day hands. Visited August 28th; conditions poor. Ventilation was deficient on east entries.

Shook.

Located near Coalton, on C., H. & D. Ry. Operated by Shook & Myers Coal Co., Coalton, O. Jacob Shook, same place, mine boss. Drift opening, No. 2 seam of coal, 26 inches thick; single entry system, furnace ventilation; employs 4 miners and 1 day hand. Visited December 13th; mine in fair condition. Ordered a larger supply of timber kept at the mine.

Bloomfield.

Located near Ridgeland Sta., C., H. & D. Ry. Operated by the Bloomfield Mining Co., R. D. No. 7, Jackson, O. G. W. Eagle, same place, superintendent. J. J. Vaughan, R. D. No. 5, Jackson, mine boss. Drift opening; No. 4 seam of coal, 4½ feet thick; double entry system, furnace ventilation; employs 6 miners and one day hand. Visited November 30th. Mine found idle; no inspection made.

Thos. Davis.

Located at Oakhill. Operated by Thos. Davis, Oakhill, O. T. J. Davis, Oak Hill, superintendent; Jno. J. Jones, same place, mine boss. Drift opening; No. 4 seam of coal, 4 feet thick, single entry system, furnace ventilation; employs 6 miners and 1 day hand. Visited October 21st. Found ventilation fair on left entry, but deficient on straight entry, caused by doors and brattices leaking. Requested them repaired. Ordered iron tamping bars and needles taken out of the mine.

Ohio Fire Brick.

Located at Oak Hill. Operated by the Ohio Fire Brick Co., Oak Hill, O. Drift opening; No. 5 seam of coal, 3 feet 8 inches thick; single entry system, furnace ventilation; employs 6 miners and 2 day hands. David Davis, Oak Hill, Ohio, superintendent; Geo. Sharp, same place, mine boss. Visited October 23rd. Mine found in good condition.

Pritchard.

Situated near Coalton on H. V. Ry. Operated by Henry Pritchard, Coalton, O., R. D. No. 1. Drift opening; No. 2 seam of coal, 30 inches thick; single entry system, furnace ventilation; machine mining; employs 3 men. Visited October 12th. Ventilation was fair; roads were in bad condition from mud and water.

Midway.

Located two miles southeast of Wellston. Operated by V. A. Pittenger, Wellston, O. Drift opening; No. 4 seam of coal, 5 feet thick, single entry system, natural ventilation; employs 5 miners and 1 day hand. Coal transported by wagon. Visited November 22nd; conditions fair.

Oakhill Firebrick.

Located at Oakhill. Operated by the Oakhill Firebrick Co., Oakhill, O. T. J. Davis, Oakhill, superintendent; Edw. Harrison, same place, mine boss. Drift opening, No. 5 seam of coal, 3 feet thick; single entry system, natural ventilation; employs 6 miners and 1 day hand. Visited November 23rd; found in fair condition.

Pyro.

Located near Oakhill Station, on C., H. & D. Ry. Operated by the Pyro Firebrick Co., Oakhill, O., R. D. No. 1. Wm. Griffiths, Oakhill, superintendent; Mitchell Tope, same place, mine boss. Drift, No. 5 seam of coal, 3½ feet thick; double entry system, furnace ventilation; employs 4 miners and 1 day hand. Visited December 3rd; found in fair condition. Ordered a supply of timber kept at the mine.

Turner.

Located on Springfield switch, transportation D., T. & I. Ry. Operated by the Turner Coal Co., Coalton, O. Harley Turner, same place, superintendent and mine boss. Drift opening; No. 2 seam of coal, 30 inches thick; single entry system, natural ventilation; employs 3 miners. This mine is a new opening. Visited November 16th. Mine found idle; no inspection made.

Oliver.

Located on Springfield switch, D., T. & I. Ry. Operated by Oliver Coal Co., Chapman, O. Jas. Oliver, same place, has charge of the mine. Drift, No. 2 seam of coal, 28 inches thick; single entry system; employs 6 miners and 3 day hands. Visited November 16th; mine found idle and no inspection made.

Grimes.

Located on Springfield switch, D., T. & I. Ry. Operated by the Humphrey & Grimes Coal Co., Coalton, O. Clate Humphreys has full charge of the mine. Drift opening, No. 2 seam of coal, 30 inches thick; single entry system, ventilated by fire basket; employs 6 miners and 2 day hands. Visited September 17th, found in good condition. Ordered iron tamping bars and needles taken out of the mine. Tested weigh scales; found incorrect.

Maerker & Hope.

Located on Springfield switch, transportation D., T. & I. Ry. Operated by Maerker & Hope Coal Co., Coalton, O. Oscar Maerker, same place, superintendent and mine boss. Drift opening, No. 2 seam of coal, 28 inches thick; single entry, natural ventilation; employs 3 miners and 1 day hand. Visited October 30th; found in fair condition.

See Kay.

Located on Price's switch, D., T. & I. Ry. Operated by See Kay Coal Co., Wellston, O. W. P. Porter, same place, superintendent; Roy Gilliland, Jackson, O., mine boss. Drift opening, No. 2 seam of coal, 3 feet thick; double entry system, furnace ventilation. Visited August 12th, to investigate fatal accident which occurred on the 11th of August to Edw. Haslett, who was killed by fall of slate while drawing pillars on first right entry. This mine has since been abandoned.

Walden.

Located near Jackson. Operated by Herbert Trago, Jackson, O. Thos. Howard, same place, mine boss. Drift opening, No. 2 seam of coal, 20 inches thick; single entry system, natural ventilation; employs 3 miners. Visited December 7th, to investigate a fatal accident which occurred on December 6th to Harvey Turner, who was killed in his working place by fall of slate. December 9th, closed down mine until all working places were properly timbered and ventilated.

Fred Jones.

Located three miles west of Coalton, on C., H. & D. Ry. Operated by Fred Jones, Jackson, O. Drift opening, No. 2 seam of coal, 32 inches thick; single entry system, ventilated by fire basket; employs 4 miners and 1 day hand. Conditions fair.

Humphreys.

Located on Springfield switch, D., T. & I. Ry. Operated by Geo. Humphreys & Bros., Chapman, O. Geo. Humphreys has charge of the mine. Drift opening, No. 2 seam of coal, 30 inches thick; single entry system, natural ventilation; employs 4 miners. Found idle; no inspection made.

Hamilton.

Located near Jackson. Operated by Mrs. Belle F. Hamilton, Jackson, O. John Hamilton, same place, mine boss. Drift opening, No. 2 seam of coal, 30 inches thick; single entry system, natural ventilation; employs 11 miners and 1 day hand. Wagon transportation. Visited December 10th; ventilation poor. Requested a door hung in No. 1 opening. Ordered a room stopped in No. 3 opening, as it had crossed several old rooms and was unsafe.

Collard.

Situated on Chapman switch, D., T. & I. Ry. Operated by Frank Collard, Coalton, O. Drift opening, No. 2 seam of coal, 3 feet thick. Single entry system, natural ventilation; employs 3 miners. Visited December 2nd. Conditions fair.

LAWRENCE COUNTY.**Cobb No. 2.**

Located at Etna Station on D., T. & I. Ry. Operated by the Halley Coal Co., Pedro, O. Morgan Evans, Pedro, O., superintendent; David C. Evans, same

place, mine boss. Drift opening, No. 5 seam of coal, 3 feet thick; single entry system, furnace ventilation; employs 60 miners and 16 day hands. Visited September 3rd; ventilation was good. First right and main entries were driven over the 60-foot limit in advance of the air. Ordered them stopped until the air was brought within the lawful distance from the face. Ordered iron tamping bars and needles taken out of the mine.

Cobb No. 3.

Located near Etna Station on D., T. & I. Ry. Operated by Wilds & Ferguson Coal Co., Pedro, O. Morgan Evans, Pedro, superintendent; Jno. Ferguson, same place, mine boss. Drift opening, No. 5 seam of coal, 3 feet thick; single entry system, furnace ventilation; employs 33 miners and 8 day hands. Visited September 4th; conditions poor. September 28th, found ventilation deficient on left and rooms on left side of main entry. Ordered mine boss to remove the men from these places until conditions were improved. October 14th, mine in fair condition. Found two working places which had no supply of timber; requested a supply sent to all working places. October 26th, mine found in good condition.

Irish Hollow Nos. 1 and 2.

Located at Black Fork, transportation B. & O. Ry. Operated by the Black Fork Co., Black Fork, O. W. E. Leonard, Black Fork, superintendent; Frank Aberts, same place, mine boss. Drift opening, No. 5 seam of coal, 2 feet 8 inches thick; double entry system, furnace ventilation; employs 63 loaders, 12 machine runners and 18 day hands. Visited October 28th. Mine found in good condition, with exception of the electric wires, which were not protected in parts of the mine. Requested that they be covered with boards.

Clarion No. 4.

Located at Black Fork, transportation B. & O. Ry. Operated by Black Fork Co., Black Fork, O. W. E. Leonard, Black Fork, superintendent; Jno. M. Hanes, same place, mine boss. Drift opening, No. 4 seam of coal, 4 feet thick; double entry system, furnace ventilation; employs 27 miners and 17 day hands. Visited August 25th, mine in poor condition. The board brattices were all leaking, caused by heavy charges of dynamite used in blasting the limestone. The board brattices are being replaced with brick and cement stoppings, which, when completed, will improve the ventilation. This mine produces both coal and limestone.

Fienup No. 5.

Located at Black Fork, transportation B. & O. Ry. Operated by the Black Fork Co., Black Fork, O. W. E. Leonard, superintendent; Jno. M. Hanes, mine boss, both of Black Fork, O. Drift opening, No. 5 seam of coal, 2 feet thick; double entry system, furnace ventilation; employs 8 miners and 3 day hands. Visited August 25th; mine had just commenced work after a suspension of several months. Ventilation was deficient on straight entries. Requested the breakthroughs cleaned out and air forced into the working places.

Ginn.

Located at Lagrange Sta., on D., T. & I. Ry. Operated by The Ginn Company, Ironton, O. H. H. Keyes, same place, superintendent; John Beanard, R.

D. No. 2, Ironton, O., mine boss. Drift opening, No. 5 seam of coal, 3 feet thick; single entry system, furnace ventilation; employs 32 miners and 4 day hands. Visited August 13th; mine was in poor condition. Ventilation was deficient on account of doors and brattices leaking. Seventh and 8th west entries were driven over the 60-foot limit in advance of the air current. Ordered those entries stopped until air was brought within the lawful distance from the face. September 9th, ventilation weak on right entry. Requested the breakthroughs cleaned out. Found a room on 5th west entry which was over the 60-foot limit in advance of the air. Ordered it stopped.

Hall.

Located near Moulton Station, C., H. & D. Ry. Operated by the Jno. F. Hall Coal Co., Dayton, O. Edw. Brohard, Jep, O., superintendent and mine boss. Drift opening, No. 4 seam of coal, 4 feet thick; single entry system, furnace ventilation; employs 52 miners and 12 day hands. Visited October 20th; mine was in good condition, with the exception of the right entry, where ventilation was weak. This entry was dry and dusty; requested it sprinkled. Found the new opening which the former district inspector requested made, completed.

Buck Horn No. 5.

Located at Buck Horn Sta., on C., H. & D. Ry. Operated by A. T. Holcomb, Buckhorn, O.; L. F. Vermillion, Buck Horn, O., mine boss. Drift opening, No. 5 seam of coal, 4 feet thick; double entry system, furnace ventilation; employs 25 miners and 9 day hands. Visited September 8th; conditions good.

Superior Portland Cement.

Located on D., T. & I. Ry. Operated by the Superior Portland Cement Co., Superior, O. E. C. Switzer, superintendent; W. E. Crothers, mine boss, both of Superior, O. Drift opening into a seam of limestone, 7 feet thick; double entry system, fan ventilation; motor haulage; employs 41 miners and 15 day hands. Visited November 26th; ventilation was fair, with the exception of rooms on 1st right entry, where the current was slow. December 6th, requested all working places properly timbered. The board brattices, which are nearly all leaking, are being replaced with brick and cement stoppings.

Kelly.

Located at Ironton. Operated by the Kelly Nail & Iron Co., Ironton, O. Conrad Klein, same place, superintendent and mine boss. Drift opening, No. 5 seam of coal, 3 feet thick; single entry system, furnace ventilation; employs 32 miners and 9 day hands. Visited September 29th; found in fairly good condition.

York Portland Cement, Lime Mine.

Located on B. & O. Ry. Operated by the York Portland Cement Co., Portsmouth, O. Arthur Stevens, Elfort, O., superintendent; Jno. M. Jenkins, same place, mine boss. Drift opening, into a seam of limestone 7 feet thick; double entry system, natural ventilation; employs 7 miners and 5 day hands. Visited December 1st; ventilation was poor. First right entry was being driven over the 60-foot limit in advance of the air. Ordered it stopped until a breakthrough was made.

Pine Grove Lime.

Located near Pine Grove Furnace. Operated by the Hanging Rock Iron Co., Hanging Rock, O. D. B. Meacham, Cincinnati, O., superintendent; Hugh Shields, Hanging Rock, O., mine boss. Drift opening into a seam of limestone 6 feet thick; single entry system, furnace ventilation; employs 16 miners and 4 day hands. Visited October 4th; found in good condition.

Kelly Lime.

Located at Bartles Sta., on D., T. & I. Ry. Operated by John Burke, Steece, Ohio. Peter Burke, same place, mine boss. Drift opening into a seam of limestone 5 feet thick; single entry system, natural ventilation; employs 13 miners and 4 day hands. Visited December 6th; ventilation was fair. Mine was very poorly timbered and scarcely any pillars were being left. Requested the mine properly timbered and larger pillars left for support.

Ironton Portland Cement.

Located at Ironton. Operated by Jon. H. Lynd, Ironton, O., who has full charge of the mine. Drift opening into a seam of limestone 5 feet thick; single entry system, fan ventilation; employs 30 miners and 20 day hands. Visited October 7th; found in fair condition. Requested the entry on south side of mine timbered. November 19th, the top on east entry was very loose. Ordered haulage on same to cease until it was timbered or taken down. Requested breakthroughs made between rooms on north entry and a check door erected.

Lawrence Mill.

Located at Royersville Sta., on D., T. & I. Ry. Operated by John Deer, R. D. No. 2, Ironton, O. Morgan Evans, Pedro, O., superintendent; John Deer, Ironton, O., mine boss. Drift opening, No. 5 seam of coal, $3\frac{1}{2}$ feet thick; single entry system, natural ventilation; employs 5 miners and 1 day hand. Visited September 30th; found in poor condition.

Olive No. 4.

Located at Olive Furnace, on C., H. & D. Ry. Operated by R. H. McGugin, Olive Furnace, O. Jacob Stevenson, same place, mine boss. Drift opening, No. 4 seam of coal, $3\frac{1}{2}$ feet thick. Single entry system, furnace ventilation; employs 12 miners. Visited September 8th; mine in poor condition; ordered mine boss to improve conditions. September 11th, found breakthroughs opened up and fair current of air passing through the working places.

Portsmouth Refractories.

Located on York switch, B. & O. Ry. Operated by the Portsmouth Refractories Co., Elfort, O. John Poetker, Elfort, O., superintendent; M. C. Dickens, R. D. No. 3, Oak Hill, O., mine boss. Drift opening, No. 5 seam of coal, 3 feet thick; single entry system, furnace ventilation; employs 5 miners and 4 day hands. Conditions fair.

Scherer.

Located near Coalgrove. Wagon transportation. Operated by Scherer & Hughes Coal Co., Ironton, O. Jacob Scherer, superintendent; Chas. Hughes,

mine boss, both of Ironton, O. Drift opening, No. 5 seam of coal, 3 feet thick; double entry system, furnace ventilation; employs 7 miners and 1 day hand. Visited November 18th, conditions good. Ordered iron tamping bars and needles taken out of the mine.

Hunter.

Located near Coalgrove. Wagon transportation. Operated by H. D. Hunter, Coalgrove, O., R. D. No. 1. Drift opening, No. 5 seam of coal, $3\frac{1}{2}$ feet thick; single entry system, natural ventilation; employs 4 miners. Conditions fair. Ordered iron tamping bars and needles taken out of the mine.

Perry Bailey.

Located near Etna Station, D., T. & I. Ry. Operated by Perry Bailey, Pedro, O. Drift opening, No. 5 seam of coal, 3 feet thick; single entry system, natural ventilation; employs 8 miners. Visited October 26th; mine in poor condition. Requested all the men taken out of the new opening with exception of the two that are driving for air.

Justice.

Located near Etna Sta., D., T. & I. Ry. Operated by W. R. Maxey, Culbertson, O. Drift opening, No. 5 seam of coal, 3 feet thick; single entry system, natural ventilation; employs 3 miners. Conditions fair.

Ryan.

Located near Coalgrove. Operated by Benj. Ryan, Coalgrove, O. Drift opening, No. 5 seam of coal, 30 inches thick; single entry system, natural ventilation; employs 5 miners and 1 day hand. Visited October 7th. This is a new opening, with no means of ventilation at present, but an airway is being driven, which is nearly through. Ordered iron tamping bars and needles taken out of the mine.

Reidel.

Located near Coalgrove. Operated by Chas. Reidel, Ironton, O. Drift opening, No. 5 seam of coal, 30 inches thick; employs 6 miners. Visited October 7th; found in poor condition. Ordered iron tamping bars and needles taken out of the mine.

Johnson No. 1.

Located near Ironton. Operated by Russell Johnson & Bros., R. D. No. 1, Ironton, O. Russell Johnson has full charge of the mine. Drift opening, No. 5 seam of coal, 3 feet thick; single entry system, natural ventilation; employs 6 miners. November 17th, mine in good condition; requested a supply of timber delivered at bank mouth.

Johnson No. 2.

Located near Ironton. Operated by Russell Johnson & Bros., Ironton, O. - Russell Johnson, superintendent and mine boss. Drift opening, No. 5 seam of coal, 3 feet thick; single entry system, natural ventilation; employs 6 miners. November 17th, conditions good.

SCIOTO COUNTY.

Sugar Camp.

Located on a switch of the B. & O. Ry. Operated by the Harbison-Walker Refractories Co., Pittsburg, Pa. W. A. Spitzer, South Webster, O., superintendent and mine boss. Drift opening into a seam of fireclay 6 feet thick; double entry system, furnace ventilation; employs 20 miners and 5 day hands. Visited August 16th; found in good condition.

Adkins.

Operated by same company and under same management as Sugar Camp mine. Drift opening into a seam of fireclay, 4 feet thick; double entry system, furnace ventilation; employs 4 miners. Visited August 16th. Conditions good.

Buckeye Firebrick & Clay No. 1.

Located at Scioto Furnace, on B. & O. Ry. Operated by the Buckeye Firebrick & Clay Co., Scioto Furnace, O. A. C. Pyles, same place, superintendent and mine boss. Drift opening into a seam of fire clay $3\frac{1}{2}$ feet thick; double entry system, furnace ventilation; employs 10 miners and 3 day hands. Visited November 24th; mine in good condition.

Scioto Fire Brick.

Located near Gephart Sta., on B. & O. Ry. Operated by Scioto Fire Brick Co., Sciotoville, O. Herman Held, Lilly, O., superintendent and mine boss. Drift opening into a seam of fire clay, 6 feet thick; single entry system, furnace ventilation; employs 7 miners and 3 day hands. Mine found idle; no inspection made.

Elfort Lime.

Located near Elfort Sta., on B. & O. Ry. Operated by Morgan & Horton, Elfort, O. W. H. Horton, Elfort, O., superintendent; Edw. Queen, same place, mine boss. Drift opening into a seam of limestone 6 feet thick; single entry system, furnace ventilation; employs 14 miners and 17 day hands. Visited November 23rd, mine found idle; no thorough inspection made. Requested that a block be put at head of the incline to hold mine cars while they are coupled onto the rope, in order to make it safe as possible for the men that are working on the tippie at the bottom of the incline.

Globe Lime.

Located near Elfort Sta., B. & O. Ry. Operated by the Star Furnace Co. and Globe Iron Co., Jackson, O. W. E. Marsh, Elfort, O., superintendent; Wm. Donnelly, same place, mine boss. Drift opening into a seam of limestone 7 feet thick; single entry system, natural ventilation; employs 15 miners and 17 day hands. Visited December 1st; mine in fair condition. Requested all dynamite taken away from the entrance to the mine to be thawed out.

Hanging Rock, Iron Ore.

Located at Ohio Furnace. Operated by the Hanging Rock Iron Co., Hanging Rock, O. Chas. Lawless, superintendent; Andw. Hass, mine boss, both of Hanging Rock, O. Drift opening into a seam of iron ore 12 inches thick; single entry system, furnace ventilation; employs 11 miners and 2 day hands. Visited on October 8th; found in poor condition. Main entry was 75 feet ahead of air; ordered it stopped. No second opening had been provided and the force was reduced to ten men. Visited October 8th; conditions poor. The main entry was driven beyond the 60-foot limit, in advance of the air. Ordered it stopped until a breakthrough was made. A second opening had not been provided, and working force was reduced to 10 men.

VINTON COUNTY.**Monitor.**

Located near Lincoln Furnace, on D., T. & I. Ry. Operated by the Monitor Coal Co., Wellston, O. O. S. Callahan, same place, superintendent and mine boss. Drift opening, No. 4 seam of coal, 4½ feet thick; double entry system, fan ventilation; employs 22 miners and 3 day hands. Visited September 27th; found in good condition. November 1st, visited in company with Mr. Harrison, chief inspector of mines. Tested the scales and found correct.

Kirkendall.

Located on D., T. & I. Ry. Operated by the Kirkendall & Piatt Coal Co., Coalton, O. F. M. Kirkendall, Coalton, O., superintendent; Albert Piatt, same place, mine boss. Drift opening, No. 5 seam of coal, 3 feet thick; single entry system, furnace ventilation; employs 24 miners and 7 day hands. Visited August 11th, conditions poor. December 17th, ventilation deficient; requested brattices erected and furnace completed within six days. December 23rd, furnace was not completed as requested on former visit, and the mine was closed down.

SECOND DISTRICT

EDW. KENNEDY.

COMPOSED OF COUNTIES OF HOCKING AND MEIGS, AND A PORTION
OF BOTH. VINTON AND GALLIA.

Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio:

Dear Sir:—In accordance with the laws of Ohio and the usual custom of the Mining Department, I have the honor of submitting to you my second annual report of the mines in the second district, covering a period from January 1, 1909, to December 31, 1909.

The second inspection district includes the counties of Hocking and Meigs and a portion of both Vinton and Gallia.

Three hundred and thirty-three visits were made in the district; 199 in Hocking county, 90 in Meigs, 37 in Vinton and 7 in Gallia.

During the time covered by this report, 8 new mines were opened in the district, 6 remained suspended and one abandoned.

The permanent improvements covered by this report are as follows: Furnaces, 6; fans, 9; air shafts, 6; additional and second openings, 12; ventilating baskets in small mines, 3.

Eight sets of scales were tested, of which 7 were found correct and 1 incorrect.

I regret to note 8 fatal accidents recorded during the time covered by this report; 4 are credited to Hocking county, 3 to Meigs and 1 to Vinton.

There are four great sources of accidents, viz: Falls of roof and coal; contact of mine cars and explosions of powder. These are to a great extent beyond the control of the mine bosses or the inspectors, and the miner should learn that upon himself alone depends his security. He should appreciate that only extreme and unremitting vigilance on his part can insure protection and security to the property of his employer and the lives of his fellow workmen.

The most hazardous duty I was called upon to perform during the year was in connection with the mine fire at Jobs No. 2 mine at Jobs, Ohio, an account of which is given in another portion of this report. Too frequent and ruinous losses to mining properties are attributable to this element, and the difficulties encountered in meeting a danger of this kind, and the attending peril to those engaged, could be reduced in a great measure by a little foresight on the part of those interested in providing the necessary material for such an emergency. I would earnestly advise all operators and owners of coal mines to keep a supply of appropriate material constantly on hand, and believe that the importance of this suggestion cannot be easily overestimated.

The mines in this district, with but few exceptions, have only worked about half-time, and a number were suspended almost the entire year. With the exception of a few places, I am of the opinion that every effort is being made to keep the mines in the best possible condition.

In conclusion, I desire to state that my relations with both miners and operators have been of the most pleasant character, and the assistance of both in securing better conditions around the mines is fully appreciated. In addition, I desire to thank you for the valuable and timely advice at all times during the year, and the many courtesies by yourself and members of the department.

Respectfully submitted,

EDW. KENNEDY, Carbon Hill, O.

December 31, 1909.

Inspector 2nd District.

HOCKING COUNTY.**Deweys.**

Located in Lost Hollow, on the Lost Run branch of the H. V. R. R. Operated by Geo. Price, New Straitsville, O., who is superintendent and mine boss. Drift opening to No. 6 seam of coal, which at this place is 4 feet thick. Employs 2 pick miners and 1 day hand. Visited February 23rd and was found in satisfactory condition. Suspended almost entire year.

Starr Nos. 1 and 2.

Located at Coonville, on the River Division of the H. V. R. R. Operated by Starr-Hocking Coal Mining Co., Bay City, Michigan. W. C. Wiper, Starr, O., is superintendent and mine boss. Drift opening into No. 6 seam of coal, 4 feet thick; machine mining; employs 8 loaders and cutters and 8 day hands. Visited November 29th, just in operation, having been idle the entire year on account of having no switch facilities. Second opening made for both north and south hills.

Prosperity.

Located at Sand Run, on the H. V. R. R. Drift, No. 6 seam, 4 to 7 feet thick; double and single entry systems and basket ventilation. Operated by the Carbon Coal Co., Carbon Hill, Ohio. B. F. Sheron, same place, superintendent and mine boss. Employs 23 loaders, 2 cutters and 9 day hands. Visited January 7th, February 26th, March 13th, July 2nd, September 21st and 22nd, November 2nd and December 27th. Conditions were poor. On September 21st ordered mine boss to take men out until there was a lawful amount of ventilation at the working faces. On September 22nd visited mine again. Found brattices repaired and partition extended, and permitted a resumption of work. Since this visit the old works have been broken into, where the main body of the coal lies. On my last two visits conditions were more satisfactory.

Stalters No. 1.

Located at Longstreth, O., on the Monday Creek branch of the H. V. R. R. Drift, No. 6 seam, 7 feet thick. Operated by the Carbon Hill Mining Co., Carbon Hill, O. Frank Hawk, same place, superintendent and mine boss. Double entry system, natural ventilation; employees at one time of the year were: 12 loaders, 2 cutters and 6 day hands. Visited February 3rd; conditions fair. April 7th, stopped them from operating machine until it was properly shielded on both sides. August 6th and October 15th, found satisfactory.

Stalters No. 2.

Located at Longstreth, O., on the Monday branch of the H. V. R. R. Drift, No. 6 seam, 7 feet thick. Operated by the Big Six Coal Co., Carbon Hill, O. Clarence Smith, same place, superintendent and mine boss. Pick mining, natural ventilation. Employs 6 miners and 1 day hand. Visited February 3rd and August 6th. Mine in fair condition

Stalters No. 3.

Located at Longstreth, O., on the Monday branch of the H. V. R. R. Operated by R. Cable, Nelsonville, Ohio, who is superintendent and mine boss. Drift opening, No. 6 seam of coal, 7 feet thick. Single entry system, machine mining and natural ventilation. Employs 8 loaders, 2 cutters and 2 day hands. Visited February 3rd, April 7th and August 6th. Mine in fair condition.

Royal.

Located at Longstreth, O., on the Monday branch of the H. V. R. R. Operated by the Royal Coal Co., Nelsonville, O. John Lax, same place, superintendent and mine boss. Drift, No. 6 seam of coal, 7 feet thick. Pick mining; single and double entry system; basket ventilation; 20 pick miners and 5 day hands employed. Visited February 5th, April 7th, August 17th and October 15th. General condition fair.

Union Furnace Clay.

Located at Union Furnace, O., on the River Division of the H. V. R. R. Operated by the Columbus Brick and Terra Cotta Co., Union Furnace, O. B. S. Fisher, superintendent; Jas. T. Beckel, mine boss, both of Union Furnace, O. Drift opening into No. 3 seam of fire clay, 10 feet thick. Employs 3 drillers and shooters, 10 loaders and 7 day hands. Worked on double entry system, furnace ventilation. Visited February 2nd, August 4th, September 29th and December 10th. Mine in good condition on each visit.

Kachelmacher Coal.

Located one mile north of Kachelmacher, on the H. V. R. R. Operated by the C. & H. C. & I. Co., Columbus, O. Fred Weymueller, New Straitsville, O., superintendent; John Weymueller, Nelsonville, O., mine boss. Drift, No. 6 seam of coal, 6 feet thick. Pick mining, basket ventilation. Employs 7 pick miners and 3 day hands. Have made second opening, sunk air shaft and installed basket. Five visits made: February 15th, April 8th, June 15th, September 30th and December 8th. Mine found in good condition on each visit.

Kachelmacher Clay Nos. 1, 2, 3, 4 and 5.

Located one mile north of Kachelmacher, on the H. V. R. R. Operated by the Columbus & Hocking Clay and Construction Co., Columbus, O. Drift openings into the Nos. 3, 4 and 5 seams of fire clay, which run from 4 to 6 feet in thickness. Machine and pick mining, furnace ventilation; employs 2 cutters, 12 loaders, 6 pick miners and 6 day hands. Fred Weymueller, superintendent; Arch Laverty, mine boss, both of New Straitsville, O. Visited February 15th, April 5th, June 15th, August 17th, September 30th and December 8th. No. 3 and No. 5 hills have been abandoned for the present. Furnace installed in No. 4 and air shaft in No. 2 hill. Owing to part of the clay in No. 1 mine being mined from the solid, it has been almost impossible to keep doors and brattices intact, and they have not been in the best possible condition at all times.

No. 53.

Located near Buchtel, O., on the H. V. R. R. Operated by the C. & H. C. & I. Co., Columbus, O. John Murday, New Straitsville, O., superintendent;

David Keeney, Buchtel, O., mine boss. Slope opening, No. 6 seam of coal, 5½ feet in thickness. Ventilated by steam fan. Employs 18 pick miners and 4 day hands. Visited March 17th; found ventilation deficient. Requested mine boss to take men out and sink air shaft at head of entry in old room. Visited mine again April 6th and found air shaft had missed the old room 15 or 20 feet. Gave permission to drive to where shaft was located. Visited again July 14th, October 1st and December 9th. Ventilation was improved, but ditches were stopped up and tracks were submerged in mud and water, which was ordered remedied at once.

Gem.

Located in Lost Hollow on Lost Run branch of the H. V. R. R. Operated by the Gem Coal Co., Nelsonville, O. H. B. Summers, same place, superintendent and mine boss. Drift, No. 6 seam, from 5 to 10 feet thick. Double entry system, fan ventilation, machine mining. Employs 4 cutters, 39 loaders and 17 day hands. Visited July 7th, August 5th and November 1st. Mine was closed down from March 27th to June 22nd. On visit of August 5th found brattices leaking; rooms on 2nd east had fallen in to surface, and fan getting a portion of air from this point. Advised fan moved to dark south entry, which would improve the ventilation.

Black Diamond Coal Nos. 1 and 2.

Located two miles from Haydenville, O. Operated by the National Fire Proofing Co., Pittsburg, Pa. H. L. Elliot, superintendent; Henry Snoke, mine boss, both of Haydenville, O. Drift opening, No. 6 seam of coal, from 4 to 6 feet thick. Furnace ventilation; employs 37 pick miners and 6 day hands. Visited February 1st, July 16th, September 24th and December 16th. The old hill is almost worked out, and only 5 miners working on the entry stumps near the mouth of the mine. In No. 2 mine on December 16th, found boy 14 years of age and ordered him taken out at once. Outside of drainage being poor, the mine was in fair condition.

Black Diamond Clay.

Located near the coal mine. Operated by same company and under same management. The product of both coal and clay mines is used at the plant. Drift opening, penetrating No. 5 seam of clay, 7 feet thick. Furnace ventilation, and employs 12 pick miners and 5 day hands. Visited February 1st, July 16th, September 24th and December 16th. On account of the system used to mine the clay, it is impossible to strictly observe the breakthrough law. A 24-foot room will be driven, leaving 100 foot pillar, and it is almost impossible to hold the rooms under this system, using posts from 12 inches to 2 feet thick. New second opening made during the year. Aside from these conditions, mine in good condition.

New Pittsburg Nos. 1 and 1½.

Both mines were suspended the entire year.

New Pittsburg No. 2.

Located at New Pittsburg, O., on H. V. R. R. Operated by New Pittsburg Coal Co., Columbus, O. Chas. England, Blatchford, O., superintendent; Wm. Lanning, same place, mine boss. Drift, No. 6 seam of coal, 6 feet thick. Pick

mining, furnace ventilation; employs 16 miners and 2 day hands. Visited January 7th, March 12th, June 3rd, August 20th, October 1st and November 26th. On visit of June 3rd, found ventilation poor. Requested furnace moved to head of the works, which was done at once, greatly improving ventilation. On visit of October 1st, old hill was abandoned and new opening being made. November 26th, new opening completed and furnace built. Condition satisfactory.

New Pittsburg No. 2½.

Located one mile west of New Pittsburg, on H. V. R. R. Operated by the New Pittsburg Coal Co., Columbus, O. Chas. England, Blatchford, O., superintendent; Geo. Douglas, same place, mine boss. Drift openings into No. 6 seam of coal, 7 feet thick; furnace ventilation. Coal is mined from the solid. Employs 50 miners and 8 day hands. Visited January 7th, June 3rd, August 2nd, September 21st and November 9th. Owing to the system of mining the coal off the solid, using heavy charges of powder, it is impossible to keep doors and brattices intact. There have been from 4 to 5 men in each working place shooting any time in the day. On each visit have found more or less smoke in the working chambers. November 9th, conditions were such that shooting hours were ordered established. Furnaces built in each hill during the year.

New Pittsburg No. 3.

Located at Blatchford on the H. V. R. R. Operated by the New Pittsburg Coal Co., Columbus, O. Chas. England, Blatchford, O., superintendent; Jno. J. Davis, same place, mine boss. Drift opening into No. 6 seam of coal, 6 feet thick; basket ventilation; coal mined off the solid; employs 40 miners and 2 day hands. Visited June 3rd, and found from 4 to 5 men in a place. There were 9 shots fired before 8 o'clock in the morning, and it was so smoky it was almost impossible to make an inspection. An air course was being driven, and when completed furnace will be installed. New mine, and only worked about a month; was suspended remainder of the year.

New Pittsburg No. 5.

Located at Murray City, O., on the H. V. R. R. Operated by the New Pittsburg Coal Co., Columbus, O. M. M. Kassler, Nelsonville, O., superintendent; John Slater, Murray, O., mine boss. Slope opening, No. 6 seam, 6 to 8 feet thick. Ventilated by 3 fans. Machine mining. Employs 10 pick miners, 22 cutters, 193 loaders and 71 day hands. Visited June 17th and 18th, August 18th and 19th and November 4th and 5th. On my visit in February mine was closed down. Visit of June 17th and 18th, mine in good condition, excepting some few rooms were very poorly timbered. August 18th and 19th, found they were not using brick brattices on No. 1 north off 4 east. Ordered same changed at once. Also experienced some trouble to get copper tamping tools installed. Requested mine boss to take all old tamping tools out of mine. November 4th and 5th, found loose top in a number of rooms, which was ordered taken down at once and brattices plastered on 1 east from No. 11 to face of entry.

New Pittsburg No. 7.

Located at Murray City, O., on the H. V. R. R. Operated by the New Pittsburg Coal Co., Columbus, O. M. M. Kassler, Nelsonville, O., superintendent;

Phil. Emmons, Murray, O., mine boss. Henry Freriks succeeded Mr. Emmons as mine boss in July. Drift, No. 6 seam, 6 to 8 feet thick. Ventilated by a new 14-foot Jeffrey steam fan and 2 electric fans. Machine mining. On last visit employed 1 pick miner, 29 cutters, 320 loaders and 94 day hands. February 17th and 18th were moving 64 men out of south hill to the north hill, closing the south down, making 344 men in north hill, with an inlet of air of 27,000 cubic feet. Called the mine bosses' and the committee's attention to this fact, and they pleaded for leniency, the men claiming they needed the work and that they were willing to work under their present condition until new steam fan was installed. June 16th, was called to investigate the fatal accident of Jas. Mitchell, who was killed in No. 11 pillar on 1 east off the 1st south, by fall of top coal. July 8th and 9th, a new 14-foot Jeffrey fan had been installed, producing 81,200 cubic feet of air, running at 80 revolutions per minute. Conditions were satisfactory, excepting on 2 west off the 4th north, where there were 7 haulers going through one door, cutting the ventilation off this part of the mine a greater part of the time. Requested lock door placed on north entry near 3rd west, which proved to be satisfactory. September 9th and 10th, conditions fair. November 3rd and 4th, requested regulator placed on 2nd west off 3 south, and brattice between 1 and 2 west torn down in order to secure more ventilation on 1st west. November 4th, investigated fatal accident to Alton Cline, who was injured November 3rd on the hoppers by missing his footing while trying to get on the front end of an empty trip. He went under the trip, three light cars passed over him, and he died the same day. November 8th, found brick stoppings were not being used on north and south entries off 1 and 2 east; left orders to have them put in at once. Aside from this, conditions were good.

New Pittsburgh No. 8.

Located near Orbiston on H. V. R. R. Operated by the New Pittsburgh Coal Co., Columbus, O. M. M. Kassler, Nelsonville, O., district superintendent; John Murphy, superintendent; Wm. Sidle, mine boss, both of Nelsonville. Slope, No. 6 seam, from 4 to 6 feet thick. Ventilated by steam and electric fans. Machine mining. Employs 16 pick miners, 16 cutters, 130 loaders and 40 day hands. Visited mine January 5th and 6th; in fair condition. March 16th and 17th, requested some portions of the motor wire changed to comply with law. Stopped No. 2 on 7 west, ahead of air, and No. 5 on 8 west for same reasons. Ordered guard-rail placed around the fly-wheel in engine-room. July 12th and 13th, requested mine boss to stop 17 men in Long Hollow—no air—and to place feed wire on suitable insulators in same hill. Stopped No. 7 on 3 west, ahead of air. September 7th and 8th, fan installed in Long Hollow, and that part of mine was satisfactory, except there was no brick stopping in south entry. November 23rd and 24th, ordered wire protected at head of every entry in the mine, and to replace old brattices on No. 1 north from motor switch to gathering switch with cement ones; also trolley wire raised at mouth of mine.

New Pittsburgh No. 11.

Located at New Pittsburgh, on the H. V. R. R. Operated by the New Pittsburgh Coal Co., Columbus, O. Chas. England, Blatchford, O., superintendent; Daniel Shay, Nelsonville, O., mine boss. Drift, No. 6 seam, 7 feet thick. Ventilated by furnace. Employs 49 pick miners and 4 day hands. Visited February 16th. Was unable to secure reading at inlet. Requested the mine boss to take men out until furnace was repaired; also brattices. March 12th, repairs having

been made, mine was in a satisfactory condition. May 12th, air-course had been made near the face of the working places; conditions were still improved. Mine closed down shortly after this visit, and was suspended the remainder of the year.

Sunday Creek Mines.

NOTE—R. S. Weltzell, Nelsonville, O., is district superintendent for Sunday Creek Company in Hocking Valley district.

Jobs No. 1.

Located near Jobs, O., on Brush Fork branch of the Hocking Valley R. R. Operated by the Sunday Creek Co., Columbus, O. C. W. Ferrell, Jobs, O., superintendent; Arthur Stiff, Murray, O., mine boss. Drift opening into No. 6 seam of coal, $4\frac{1}{2}$ to 6 feet thick. Ventilated by electric fan. Machine mining. Employs 100 loaders, 12 cutters and 31 day hands. Visited February 19th: mine in good condition. April 6th, stopped No. 6 on 4 west until breakthrough, which had been abandoned, was completed. Also ordered two boys under lawful age taken out of mine. July 14th, mine in good condition. September 3d, found brattice down at No. 8 on 3 east; otherwise satisfactory. October 14th, tested scales and found them correct.

Jobs No. 2.

Located at Jobs, O., on the Brush Fork branch of the H. V. R. R. Operated by the Sunday Creek Co., Columbus, O. C. W. Ferrell, Jobs, O., superintendent; Wm. Morgan, Murray, O., mine boss. Drift opening into No. 6 seam of coal, 6 feet thick. Ventilated by two electric fans. Machine and pick mining. Employs 3 pick miners, 12 cutters, 135 loaders and 52 day hands. February 21 and 25, mine in fair condition. April 7th, fire broke out on the night of April 6th near the 6th west on long north. Mr. Jos. Smith and C. W. Farrell worked a gang of men all night on the 6th, but were unable to get near the fire. The only means of ventilation for this part of the mine was located at or near where the fire originated, making it impossible to get near it. On April 7th an attempt was made to brattice it off, but the mine had filled up with smoke and carbon monoxide gas. The men, ignorant of the deadly effects of this poisonous gas, worked in it until four men fell unconscious. Visited this mine on the evening of April 7th, and after consulting Mr. Monsarrat, it was agreed that we would start the next morning on the Dixon Hollow side, it being 3,500 feet from the fire on that side, and 8,800 feet from the Jobs side. On going to the Dixon Hollow opening the next morning, found a fan being installed 180 feet on inside of the mouth of the mine, making a suction fan of it. Was informed that their plans had been changed and operations commenced on the other side. My opinion was adverse to this procedure, and maintained that this would be the wrong side on which to start. On April 8th, David Williams, Jas. Pritchard, Frances Payne, Jos. Smith and myself and four day men went into the mine to erect a door and brattice at 3 south for the purpose of using the 3rd south fan to ventilate the part of the mine affected by the fire, which proved a failure, as we could get no farther than rope switch, where we found two dead horses and had them removed. We saw there that it was useless to try to go farther without some safer mode of ventilation. Advised Mr. Monsarrat to seal the openings and install two steam fans, to which he readily agreed. After the two large fans were installed, one at each opening, we were

still handicapped, the entry having fallen in tight somewhere near the fire and leaving no outlet for ventilation. On April 15th, Chief Inspector Harrison and District Inspector Jno. L. McDonald were called in consultation. While Chief Harrison, McDonald, Jas. Pritchard, Edw. Fluke, Link Murphy and myself were in the mine at No. 2 west door off the long north, discussing some means for an outlet for air, there was either a light explosion or a very large fall, which tore doors and brattices to pieces in that section of the mine and made an outlet for air through the second west clean around the fire. On April 16th, Dr. Rutledge, Morris, Jones and Peterson arrived with helmets from the experimental station, Pittsburg, Pa. Going in the mine April 17th, sent men in long north at 3:15 o'clock. They returned at 3:31 o'clock and reported fire on the west side of north entry, and fall of stone. Pumped water on fire until the next morning, with very little effect. Dr. Rutledge and party took observations the next two days and reached the fire on main and dark north on south side of fire. Went through second west, crossed north entries to No. 5 west and crossed to 6th. Got within 30 feet of where the fan was located, finding fire on both sides of 6th west entry. From the observations taken, we were certain that the fire extended 400 feet, and acting on their advice, started to seal the two north entries on south side of fire. April 20th, Dr. Rutledge and assistants went to Dixon Hollow to take observations on the north side of the fire, but were not able to get very far on account of falls. We then started to seal the entire territory affected by fire, which covered an area of 90 acres, taking 30 brick brattices and 51 days and nights to complete the seal. May 25th, with Chief Inspector Harrison, District Inspector McDonald, C. W. Ferrell, Mine Superintendent Geo. Garner and John Shores, an inspection was made of brattices surrounding the fire, which were found in good condition. The work was greatly facilitated by the able assistance of Jno. L. McDonald, inspector of the 3rd district; Jas. Pritchard, D. H. Williams, Edw. Fluke, C. W. Ferrell and Jos. Smith, whose experience and advice were much appreciated. Visited mine June 1st. Mine started up, worked 5 hours, being the first work since April 6th. Made a round of the stoppings and found them in good condition. Visited mine again July 15th, on complaint in regard to ladders in air shaft. Were found in good shape. Had platforms made for resting places. Visited again on July 19th; found mine in good condition. August 2nd, made inspection of air-lock, which was satisfactory; also made inspection of brattices surrounding fire, which were found satisfactory. September 13th, made inspection of fire brattices and found leaks in dark west brattice, leak in 3rd west off south, and black damp escaping through clay on dark north on north side of fire. All pipes discharging black damp. September 23rd, stopped No. 4 on 1st east, 86 feet ahead of air. Requested two brattices built between 3 and 4 east, check door on 3 west, trapper placed at 3 east door, and all doors repaired on 3rd south. October 11, 12, 13 and 14, Dr. Rutledge, Morris, Jones and Williams arrived with helmets; went through air-lock on north entry on south side of fire, and tore brick brattice down, and with helmets explored the interior where the fire had been located. There were no indications of any fire; finding large pieces of coal that had been charred and gone out; digging down into the ashes found they were cool. Temperature was about normal, and ribs and roof were cool, where once had been a raging furnace. Were not able to explore only 120 feet north of air-lock. The entry had fallen in tight. Considering the location of this fire and the rapidity with which it spread, it was one of the most successful seals ever made in Ohio. November 3rd, was called to investigate the fatal accident to Fred Gears, machine helper, who was killed at face of No. 2 room on 3rd east in 3rd south by fall of coal from face and rooster coal from roof.

Elderberry, or Part of Jobs No. 2.

Located at Jobs, O., on the H. V. R. R. Operated by the Sunday Creek Co., Columbus, O. C. W. Ferrell, Jobs, O., superintendent and mine boss. Fan and furnace ventilation. Employs 12 pick miners, 4 cutters, 48 loaders and 13 day hands. Visited February 25th. North part of this mine is ventilated from the 3rd south fan in the No. 2 mine. Ventilation was poor, finding air shaft open on rope road, cutting the air off this part of mine. May 12th, stopped 1 south across rope road—no air. Ordered door on cut-off between 3 and 4 south, and check door on 2 west off north. September 22nd and 23rd, ordered door kept shut at viaduct. Ventilation cut off 1 east, door sawed off and kept shut on 2 west, and brattices plastered all over mine. Ventilation was sluggish all over mine, due to poor brattices.

Jobs No. 3.

Located at Jobs, O., on the H. V. R. R. Operated by the Sunday Creek Co., Columbus, O. C. W. Ferrell, Jobs, O., superintendent and mine boss. Drift opening into No. 6 seam of coal, 6 feet thick. Ventilated by fan. Machine and pick mining. Employs 21 pick miners, 2 cutters, 11 loaders and 11 day hands. Visited February 16th, July 15th and September 22nd; found in good condition.

Snake Hollow, No. 207, West Hill.

Located in Snake Hollow, on a branch of the Hocking Valley R. R. Operated by Sunday Creek Co., Columbus, O. E. W. Dowler, Nelsonville, O., superintendent. During the year, Daniel Bateman succeeded E. W. Dowler as superintendent. Jos. Ball, mine boss. Drift opening into the No. 6 seam of coal, 6 feet thick. Ventilated by fans. Employs 11 pick miners, 12 cutters, 80 loaders and 51 day hands. Visited February 4th. A new second opening had been made, and were making new manway out the 3 east. Mine in good condition. March 8th, found top very bad in 8 and 9 west entries. Left orders for slate men to examine it every morning before working time. Ordered door on cut-off between 10 and 11 west, and wire protected on 7 west. June 2nd, mine in fair condition. August 16th, ordered 5, 6, 7 and 8 east bratticed off and new opening made inlet for air. Stopped 6 west entry ahead of air. Requested brick brattices on north and south entries off the 6th west. September 20th, tested scales and found correct. November 22nd, 3rd north had been driven outside, which makes them three good outlets. Ordered top taken down in No. 3 room on 9 west; cross cap No. 4 room on 9 west; cross cap 4 west entry near cut-off, and build door on motor road to shut circuit of air from fan.

Snake Hollow, No. 207, North Hill.

Located at same place and under the same management. Drift opening into No. 6 seam of coal, 6 feet thick. Ventilated by fan. Machine and pick mining. Employs 4 pick miners, 2 cutters, 18 loaders and 6 day hands. Visited February 5th; ordered fall cleaned up on inlet entry, which had the ventilation choked. June 2nd, stopped 1 east entry 116 feet ahead of air. Aside from this, conditions fair. August 16th, ordered more timber kept in mine and fall cleaned up on inlet entry at man-way, which had choked ventilation. November 22nd, ordered brattices on main entry repaired. There is nothing but stump and pillar work in this hill.

Sunday Creek No. 4.

Suspended the entire year.

Domestic Nos. 1 and 2.

Located one mile north of Murray City, on the H. V. R. R. Operated by the Hocking-Domestic Coal Co., Murray, O. W. M. Thomas, Murray, O., superintendent; Geo. Brooker, same place, mine boss. Drift openings into No. 6 seam of coal, $7\frac{1}{2}$ feet in thickness. Ventilated by basket. Employs 7 miners and 3 day hands. Visited March 15th. Had just opened the north hill. December 9th, hoppers were up and some coal being loaded; air shaft sunk and basket installed. East opening was being made. Ordered boy 14 years of age taken out of mine. Mine in good condition.

Copperhead.

Located two miles east of Gore, O., on the Straitsville branch of the H. V. R. R. Operated by the Hocking Fuel Co., Columbus, O. Thos. McLeish, Columbus, O., superintendent; Isaac Hite, Gore, O., mine boss. Chas. James, New Straitsville, O., succeeded Hite as mine boss in September. Fan ventilation. Machine mining. Employs 4 cutters, 30 loaders and 10 day hands. Visited February 23rd; stopped 3rd east entry 84 feet ahead of air. Ordered trapper placed at second east door. August 30th, stopped No. 1 room on 3 east ahead of air. Ordered mud taken out of mine and sumps shot at low points in mine to centralize the water. September 11th, some mud had been taken out of mine, but had dug no sumps, having had orders to shut the mine down. November 1st, the track that had been repaired was submerged in mud and water until it was almost impossible to get through the mine. Left orders that it must be taken out of mine at once. This company has very little respect for their men and stock.

Rock Quarry.

Located one mile west of Carbon Hill, O., on H. V. R. R. Owned by the Nelsonville Coal Co., Nelsonville, O. Operated by Receiver E. D. Carr, Columbus, O. Wesley Miskell, Nelsonville, O., superintendent; Oscar Tom, Carbon Hill, O., mine boss. Drift, No. 6 seam, 4 to 6 feet thick. Machine mining. Fan ventilation. Employs 12 cutters, 106 loaders and 32 day hands. Visited January 4th. Stopped No. 11 room on 2nd east 90 feet ahead of air, and ordered wire protected on 1 and 2 east and at head of 4 west. Fan had been installed in west hill, making conditions satisfactory. March 11th, conditions not as satisfactory as they should have been. Breakthroughs had been stretched. Stopped three machines until they were properly shielded. Swore out affidavit for Jas. Powell for burning impure oil. October 25th, mine closed down. March 17th, had become insolvent, and operations resumed by Receiver E. D. Carr on October 5th. Mine in fair condition. December 4th, investigated fatal accident to S. E. Holt, who was injured in main west at face of No. 7 room on December 3rd by fall of draw slate, and died December 4th. December 10th, found three falls on main inlet, which had choked the ventilation. Ordered same cleaned up at once. Two old board stoppings near switch replaced with brick ones. Trapper placed on 3 west door. Brattice built in one south entry, and air discharged from west hill through the 3rd west in south hill. The two hills have been connected, providing second opening for the west hill.

Edgell.

Located at Sand Run, O., on the H. V. R. R. Operated by the Edgell Coal Co., Carbon Hill, O. John Carter, Nelsonville, O., superintendent and mine boss. Drift opening into No. 6 seam of coal, 6 feet thick. Furnace ventilation, pick mining. Employs 7 pick miners and 1 day hand. Visited July 2nd and November 2nd. Found in good condition.

Sunday Creek No. 513.

Located at Consol, O., on the Brush Fork branch of the H. V. R. R. Operated by the Green Coal Co., Nelsonville, O. Aaron Green, same place, superintendent and mine boss. Drift openings into the No. 6 seam of coal, 6 feet thick. Ventilated by basket and furnace. Pick mining. Employs 13 pick miners and 2 day hands. Visited July 15th; found satisfactory. October 1st, ordered door on mouth of mine; door at jaws of No. 1 room; door on cut-off between 1 and 2 rooms in east hill. Stopped Nos. 1 and 2 rooms in north hill ahead of air. November 26th, mine in fair condition.

Diamond Clay.

Located near Haydenville, on the H. V. R. R. Operated by the Diamond Clay Co., Nelsonville, O. John Rhutter, Nelsonville, O., superintendent; E. Campbell, same place, mine boss. Drift opening. Employs 3 diggers and 3 day hands. The clay is ground at the mine and shipped to factories at different points.

SMALL MINES VISITED.**Woodard.**

Located two miles west of Union Furnace. Operated by J. V. Woodard. Employs 3 miners and 1 teamster. Coal is consumed at Union Furnace brick plant. Furnace ventilation.

Hantzell.

Located $2\frac{1}{2}$ miles west of Union Furnace. Operated by Chas. W. McLain. Employs 2 miners. Coal consumed at Union Furnace brick plant.

Green.

Located at Sand Run, O. Operated by Lewis Green, Sand Run, O. Employs 2 miners. Coal is used for domestic purposes.

Evans.

Located at Longstreth, O. Small domestic mine, operated by Wm. Evans, Carbon Hill, O. Employs 2 miners.

MEIGS COUNTY.**Logan.**

Located at Pomeroy, O. Operated by Martin Ebersbach, Pomeroy, O. Geo. Ebersbach, superintendent; Walter Ebersbach, mine boss, both of Pomeroy, O. Machine mining; natural ventilation. Employs 2 cutters, 6 loaders and 3 day hands. Visited mine March 5th, August 27th and December 21st. Mine in fair condition.

Red Bird.

Located near Silver Run, on the H. V. R. R. Operated by the Pomeroy Fuel Co., Columbus, O. David Wallace, Glouster, O., superintendent; W. E. Joseph, Cheshire, O., mine boss. Drift opening into the No. 8 seam of coal, $4\frac{1}{2}$ feet thick. Furnace ventilation. Machine mining. Employs 6 cutters, 25 loaders and 12 day hands. Visited mine October 5th. Mine had been idle for 19 months and was not found in the best condition. Ordered all wire in mine protected with boards; breakthroughs cut in all rooms; guard wheel placed around fly-wheel, and stretcher and blankets provided. December 2nd, mine was in better condition.

Rockville No. 2—Kings.

Located three miles north of Middleport, O., on the K. & M. R. R. Operated by the Harley Coal Co., Middleport, O. Drift opening into the No. 8 seam of coal, 5 feet thick. Machine mining; fan ventilation. Employs 4 cutters, 34 loaders and 10 day hands. Visited January 27th; mine in fair condition. March 24th, ordered two machines properly shielded before again being operated. Other conditions satisfactory. Mine was closed down remainder of the year.

Buckeye Splint North, Nos. 1 and 3.

Located at Rutland, O., on the K. & M. R. R. Operated by the Maynard Coal Co., Columbus, O. Wm. Williams, Rutland, O., superintendent; Wm. Hartenstine, Long Bottom, mine boss. Drift opening into No. 8 seam of coal, 5 feet thick. Furnace ventilation. Machine mining. Employs 4 cutters, 28 loaders and 12 day hands. On last visit, January 26th, mine in fair condition. March 25th, conditions satisfactory in No. 1 mine, but not in No. 3 mine. Ordered 3 doors and 2 brattices built at once to conduct the ventilation, or men taken out. July 27th, ordered furnace cleaned out and fire started before working time, and 2 east driven outside for second opening; also brick brattices built in north entry. September 16th, ordered doors between 1 and 2 west and 3 and 4 west, and stack made higher on furnace. This mine closed down October 15th for remainder of the year.

Buckeye Splint No. 2, South.

Located at Rutland, O., on the K. & M. R. R. Operated by the Maynard Coal Co., of Columbus, O. Wm. Williams, Rutland, O., superintendent; John True, same place, mine boss. Drift opening, No. 8 seam, 5 feet thick. Furnace ventilation up until December 1st. Installed fan on that date. Machine mining. Employs 16 cutters, 146 loaders and 39 day hands. Visited January 26th; in fair condition. March 25th, found loose top in several places in mine, which was ordered taken down. Mouth of 2nd opening had caved in; ordered cleaned out.

June 25th, mine closed down, installing plant. July 27th, mine in poor condition; brattices leaking, wire not properly protected, one machine with no shields, and the breakthrough law evaded. September 16th, natural ventilation had overpowered furnace. Ventilation was poor. October 7th, had miners exchange copper tools that did not comply with law for new ones. Conditions fair. October 28th, stopped No. 2 on 9 east, ahead of air; stopped No. 10 on 8 west, ahead of air; ordered door on south entry between 10 and 11 west. No. 7 west driven outside and made manway of it. Tested scales and found correct. December 23rd, old north near mouth of mine started up. No provisions made for ventilation. Ordered mine boss to stop the 12 men working there until ventilation could be directed to the faces, which would require 5 brattices and 4 doors. Fan installed, and, outside of the old north, ventilation was found good.

Dabney.

Located between Middleport and Pomeroy, on the H. V. R. R. Operated by T. W. Jones, Middleport, O., who is superintendent. Andw. Smith, same place, mine boss. Drift opening into No. 8 seam of coal, 5 feet thick. Ventilated by furnace. Pick mining. Employs 11 pick miners and 7 day hands. Visited January 29th. Stopped No. 3 on first east, ahead of air. Stopped 1st east entry, ahead of air, but finding it only lacked a few feet from the outside, gave them permission to drive it out. July 23rd, 1st east had been driven outside, which improved the ventilation. Took all the old tamping tools out of mine and ordered them to use copper ones. October 29th, ordered breakthrough cut in Nos. 1, 2, 3, 4, 5 and 9 rooms, and more timber kept in mine. Coal is hauled by mules $2\frac{1}{2}$ miles, going through two hills into the third one for the coal. In the first two hills there has been a squeeze, and the sides and top were not in the best condition, but were working two men at night, cleaning it up.

Rolling Mill.

Located at Pomeroy, O., on the H. V. R. R. Operated by Martin Ebersbach, Pomeroy, O. Fred Ebersbach, same place, superintendent; Fred G. Jones, Minersville, O., mine boss. Drift, No. 8 seam of coal, $4\frac{1}{2}$ feet thick. Double entry system. Fan ventilation. Machine mining. Employed on last visit, 4 cutters, 17 loaders and 11 day hands. February 27th, investigated fatal accident of Homer Roush, coal hauler, who was killed by fall of slate on 5th west entry at jaws of room 39, on February 26th. March 2nd and 5th, found considerable loose slate in the mine and ventilation weak. Upon investigation, found belt loose on fan. On March 5th, belt had been taken up and conditions very much improved. August 11th, laws were fairly well complied with, excepting some wire was not protected. October 6th, the territory was working out fast, there only being about one-fourth the number of men formerly employed. Mine in fair condition. December 21st, just a few men employed. Mine is almost worked out, and was in satisfactory condition.

Noble Summit.

Located three miles north of Middleport, O., on the K. & M. R. R. Operated by the Noble Summit Coal Co., Middleport, O. John Kauff, same place, superintendent and mine boss. Drift opening into No. 8 seam of coal, 5 feet thick. Pick mining. Furnace ventilation. Employs 31 pick miners and 7 day hands. This mine was closed down from February 11th to November 9th.

Visited November 15th. Ventilation poor in Nos. 1 and 2 rooms on 1st east. Ordered check door and breaks stopped up between rooms at that point. New second opening made. Mine in good condition.

Ohio River Coal Co., Nos. 1, 2 and 3.

Located at Pomeroy, O., on the H. V. R. R. Operated by Ohio River Coal Co., Columbus, O. Wm. Kauff, Middleport, O., superintendent and mine boss. Drift openings into No. 8 seam of coal, 5 feet thick. Natural ventilation. Pick mining. Employs 16 pick miners and 6 day hands. Visited November 1st. This is a new mine, running its first coal on this date. The work will be mainly pillar and stumps and crop coal. Was found in good condition.

Charter Oak.

Located at Pomeroy, O. Transportation, Ohio River and H. V. R. R. Operated by the Peacock Coal Co., Pomeroy, O. Fred Ebersbach, Pomeroy, O., superintendent; Wm. Ebersbach, same place, mine boss. Drift, No. 8 seam, 4 feet thick. Double entry. Fan ventilation. Machine mining. Employs 24 cutters, 145 loaders and 55 day hands. Visited mine March 3rd. Stopped No. 14 room on 11 west ahead of air. Ordered shields on machines; otherwise mine in fair condition. June 24th, mine in fair condition. August 24th and 25th, laws were fairly well complied with. November 17th, stopped No. 24 room on 14 west and 13 west entries ahead of air. Ordered loose top taken down at jaws of No. 9 room on 17th west. Otherwise mine in good condition.

Pittsburg.

Located at Minersville, O. Operated by the Pittsburg Mining Co., Pomeroy, O. Transportation, Ohio River and H. V. R. R. W. H. Miller, Minersville, O., superintendent; Earl Ewing, Syracuse, O., mine boss. Drift, No. 8 seam of coal, $4\frac{1}{2}$ feet thick. Double entry system; fan ventilation. Coal is mined and hauled by electric power. Employs 14 cutters, 89 loaders and 24 day hands. Visited March 4th. Found ventilation close at face of rooms, due to breakthroughs next to face of rooms being filled full of top coal, which was ordered loaded out at once; also found breakthroughs stretched in several places. March 23rd, inspected machines and ordered them stopped until they were properly shielded on both sides. June 24th, mine in fair condition. August 12th, ordered wire protected on 1st east, 1st west and 3rd west entries; otherwise satisfactory. October 27th, No. 1 west entry had been broken through to No. 2 north, making short cut for ventilation. Ordered regulator placed at head of No. 1 west, and ventilation equally split for the two entries; two cement brattices built on main east; stopped one place working on main east and No. 6 room on 7 east ahead of air. December 22nd, ordered 7 brattices cemented on 3rd north; trapper placed on 6 east door; check doors on 3 and 4 west entries. Mine generally found in fair condition.

Silver Run.

Located at Silver Run, on the H. V. R. R. Operated by the Silver Run Coal Co., Middleport, Ohio. W. C. Russell, Middleport, Ohio, superintendent. John E. Reese, same place, mine boss. Drift opening into No. 8 seam of coal, $4\frac{1}{2}$ feet thick; double entry system, ventilated by two electric fans. Employs

4 cutters, 23 loaders and 9 day hands. Visited January 28th; ventilation deficient on 1 and 2 east and 1 and 2 north, due to gob brattices being found in a settled condition. Ordered brattices on east repaired, and three new brick brattices on north. June 22nd, mine idle; repairing boilers. July 22nd, ordered two boys, who were not of lawful age, taken out of mine. Stopped first west entry ahead of air. Ordered No. 1 room on second west timbered and breakthroughs in rooms made larger. September 15th, mine in fair condition. December 1st, stopped No. 1 room on second west ahead of air. Ordered all breakthroughs cleaned out next to face of rooms, and ventilation checked to face of same. Also remainder of trolley wire changed to comply with law. This mine has had very poor supervision. On almost every visit made, some violations have been noted, and taking the matter up with the management he would agree to repair the same, but returning on next visit would offer some excuse for the needed repairs not being made.

Salisbury.

Located three miles north of Middleport, Ohio, on the K. & M. R. R. Operated by the Salisbury Coal Co., Toledo, Ohio. Geo. Salles, Middleport, Ohio, superintendent. Wm. Dinsmore, same place, mine boss. Double entry system, drift opening into No. 8 seam of coal, $4\frac{1}{2}$ feet thick. Fan ventilation. Coal cut by electric power. Motor and mule haulage. Employs 6 cutters, 43 loaders and 14 day hands. Visited January 27th. Mine was idle a week, on account of motor on fan burning out. Was unable to get to faces of rooms for black damp. Ordered fan run all day and all that night, as they expected to operate the mine the following day. July 28th, mine was in fair condition. September 17th, in fair condition. November 16th, investigated fatal accident of Madison Graham, miner, who was killed in the second south entry November 15th by fall of draw slate. Mine was not in as good condition as it should be. Doors were in poor condition. Brattices on 6 west had not been cemented, and some wire was not protected. Ordered same repaired at once.

Hobson.

Located near Hobson Railroad yards, on the K. & M. R. R. Operated by the Pomeroy Coal Co., Little Washington, Pa. J. S. Cummings, Middleport, Ohio, superintendent. Geo. M. Renshaw, same place, mine boss. Drift, No. 8 seam, $4\frac{1}{2}$ feet thick. Double entry, fan ventilation, machine mining; employs 6 cutters, 3 pick miners, 29 loaders and 18 day hands. Owing to bad top and poor class of labor usually employed, this mine has been given more attention than any other in the district. Visited January 28th. Found brattices, which were made of slate, in a settled condition, and ventilation poor at head of 1 and 2 west. Ordered trapper at 2 west door, and more timber used in rooms on 1 and 2 west. March 1st, stopped No. 5 on 1 west and No. 1 on 3 west ahead of air, and ordered loose top taken down in No. 1 room on No. 1 west. March 24th, investigated fatal accident to John Bowman, miner, who was injured by fall of slate at face of No. 6 room on 1 west, on March 23rd, and died March 24th. Requested timbers taken out and loose top taken down at face of No. 7 room on 1 west, and loose top taken down at face of 1 west entry. June 22nd, an electric plant installed. Mine in fair condition. August 10th, ordered door on main west between 1 and 2 south, and trolley wire boxed where it crosses 1 north and feed wire that was torn down, again put in place. September 15th, new electric fan installed. Condi-

tions satisfactory. November 18th, Geo. Jenkins had taken charge, with T. A. Harley as mine boss. Stopped second south entry ahead of air. Requested door repaired on main west, door hung on cut-off on main west, and wire protected at head of main west with boards and brick stoppings on main west. December 24th, stopped No. 8 room on 4 north; stopped 4 men in 3rd south until door was hung on main; ordered door hung between 5 and 6 north; and door on cut-off between main and dark west entries.

Thomas Shaft.

Located on the Ohio river, near Racine, Ohio. Operated by the Thomas Coal Co., Racine, Ohio. J. W. Thomas, superintendent. David Lawson, mine boss. Both of Racine. Shaft opening, 112 feet deep, penetrating the No. 8 seam of coal, 4 feet 8 inches thick. Machine mining, natural ventilation; employs 2 cutters, 6 loaders and 2 day hands. Visited January 25th. Second opening had been stopped, owing to the amount of water to contend with. Are driving entries themselves to where second opening is located. They will then drill six-inch hole through to the entry to liberate water. August 13th, installing an electric plant. October 6th, ordered them to rush second opening with all possible haste. December 3rd, second opening made, but stairway not yet built. Requested same made at once, and fan installed as soon as possible.

Schlaegel.

Located at Pomeroy, Ohio. Operated by the Schlaegel Salt Co., Pomeroy, Ohio. Jas. Schlaegel, superintendent. William Baker, mine boss, both of Pomeroy, Ohio. Drift, No. 8 seam, $4\frac{1}{2}$ feet thick. Coal is mined with pick, and consumed at salt plant. Employs 20 pick miners and 4 day hands. Furnace ventilation, double entry system. Visited March 26th. Ventilation weak, due to a fall tearing a brattice down on main inlet, which was ordered repaired at once. October 8th, conditions unsatisfactory. Track was submerged in mud and water, and requiring doors to conduct the ventilation to the working faces, and had very little fire in furnace. Ordered management to make needed repairs at once, which they agreed to do.

Headley.

Located near Middleport, Ohio. Operated by John Headley, Middleport, Ohio, who is superintendent and mine boss. Drift opening, No. 8 seam, $4\frac{1}{2}$ feet thick. Pick mining, double entry system and furnace ventilation. Employs 8 pick miners, 2 day hands and 2 teamsters. Coal is consumed at brick plant. Visited July 22nd and found old slate brattices in a settled condition and fire low in furnace. Could not secure reading of air at face of works; ordered same repaired at once. November 18th, mine in fair condition.

SMALL MINES VISITED.

Dyke No. 1.

Located at Pomeroy, Ohio, on Carrs Run; employs 2 miners and 1 day hand. Edw. Weeks, mine boss.

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Needs.

Operated by Richard Needs, Pomeroy, Ohio. Located on Carrs Run and employs 1 miner.

Enterprise.

Operated by Geo. Baer, Minersville, Ohio. Pick mining, furnace ventilation. Employs 4 miners and 1 day hand.

Elberfield.

Operated by Geo. Elberfield, Pomeroy, Ohio; 2 miners employed; natural ventilation.

Boss.

Operated by F. M. Boss, Pomeroy, Ohio. Employs from 2 to 4 pick miners has natural ventilation.

Folmer.

Operated by Jno. Folmer & Son, Pomeroy, Ohio. Employs from 3 to 4 miners and has natural ventilation.

Roush Nos. 1 and 2.

Operated by Jas. Roush, Pomeroy, Ohio. Employs 2 miners.

Baer.

Operated by Edw. Baer, Pomeroy, Ohio. Employs 2 miners.

Wolf & Vercoy.

Operated by Wolf & Vercoy, Pomeroy, Ohio. Employs 2 miners.

Owens Bros.

Operated by Owens Bros., Middleport, Ohio. Employs 3 pick miners.

Woodard.

Operated by W. H. Woodard, Middleport, Ohio. Employs 3 pick miners.

Brechtel.

Operated by Peter Brechtel, Middleport, Ohio. Employs from 4 to 8 pick miners and 1 day hand.

Dixon.

Operated by Chas. Dixon, Middleport, Ohio. Employs 3 pick miners and 1 day hand.

Woodyard.

Operated by Ami Woodyard, Middleport, Ohio. Employs 2 pick miners.

Joe Zwilling.

Operated by Joe Zwilling, Middleport, Ohio. Employs 2 pick miners.

Densmore.

Operated by Chas. Densmore, Middleport, Ohio. Employs 2 pick miners.

W. D. Powell.

Operated by Wm. Rife and Wm. Wells, Middleport, Ohio. Employs 2 miners and 1 day hand.

Ficks Nos. 1 and 2.

Operated by Phillip Fick, Pomeroy, Ohio. Employs 6 pick miners and 1 day hand.

Bowers.

Operated by Geo. Bowers, Pomeroy, Ohio. Employs 4 pick miners.

Swamp Hollow.

Operated by J. W. Grogan, Middleport, Ohio. Employs 2 pick miners.

Russell.

Operated by Jas. Russell, Middleport, Ohio. Employs 1 miner.

Horden.

Operated by Horden Bros., Middleport, Ohio. Employs 2 pick miners.

Edward Bros.

Operated by Edward Bros., Minersville, Ohio. Shaft opening; employs 2 miners and 1 day hand.

VINTON COUNTY.**Alma Cement Limestone Mines Nos. 1 and 2.**

Located two miles south of Oreton, Ohio, on the H. V. R. R. Operated by the Alma Cement Co., Wellston, Ohio. Wm. Davis, same place, superintendent. M. C. Dickens, Oreton, Ohio, mine boss. Drift opening into a seam of limestone 6 feet thick. Double entry system, ventilated by two fans; employs 24 pick miners, 8 cutters and drillers, 7 loaders and 16 day hands. Visited February 12th, July 1st, and October 20th. New fan installed in No. 2 mine. Mines were found in fair condition on each visit. Have only worked about half time this year.

Alma Lime Nos. 51 and 52.

Located at Oreton, Ohio, on the H. V. R. R. Operated by the Alma Cement Co., Wellston, Ohio. Wm. Davis, Wellston, Ohio, superintendent. David Eberts, Oreton, Ohio, mine boss. Drift opening, penetrating a seam of limestone 7 feet in thickness, and is ventilated from coal mine. Employs 11 pick miners, 2 drillers and 7 day hands. Visited February 11th; found in good condition. June 30th, was found satisfactory. August 3rd, investigated fatal accident to Benj. Yates, who was killed August 2nd in No. 3 room on 1 east by fall of shale lime. Estimated to be 300 tons in fall.

Alma Lime Nos. 55, 56 and 57.

Operated by same company and under same management as Nos. 51 and 52. Machine and pick mining; employs 17 pick miners, 10 cutters and drillers, 13 loaders and 17 day hands. Visited February 12, June 30, October 19 and 20. Tested scales on last visit and found incorrect. General condition fair on all three visits.

Alma Coal.

Located at Oreton, Ohio, on the H. V. R. R. Operated by the Alma Cement Co., Wellston, Ohio. Wm. Davis, Wellston, Ohio, superintendent. Thos. Davis, Oreton, Ohio, mine boss. Drift opening into No. 4 seam of coal, 4 feet thick; double entry system, fan ventilation. Employs 12 cutters, 72 loaders and 26 day men. Visited Feb. 11th. Mine had been idle from November 1st to February 1st. Outside of Nos. 17 and 18 rooms on 3 west requiring more timber set and some trolley wire changed mine was in good condition. June 30th, gave management orders to see that more timbers were set in rooms. Otherwise mine in good condition. Oct. 19th, ordered brick brattices on south entries; door hung between 9 and 10 west; check ventilation to face of rooms on 3 and 4 west and 7 and 8 west; other conditions satisfactory. Tested scales and found correct.

Elk Fork.

Located at Elk Fork, on H. V. R. R. Operated by the Elk Fork Coal Co., Elk Fork, Ohio. Shaft opening, 95 feet deep, penetrating the No. 2 seam of coal, 30 inches thick. Machine and pick mining, fan ventilation. Employs 4 cutters, 23 pick miners, 14 loaders and 25 day hands. Visited March 10th. Ordered ventilation checked to face of rooms on 3 and 4 west in north and 7 and 8 west in south. June 29th, mine shut down; installing new boilers. August 23rd, requested old brattices replaced on south end of mine with brick ones and wire protected on 4 east. October 21st, ordered Nos. 7, 8 and 9 on 8 west properly posted; check door on 2 east; door on cut-off between 3 and 4 east and brattices plastered on north entry. Tested scales; found correct. August Ruff, Elk Fork, Ohio, superintendent and mine boss.

Clarion.

Located at Clarion, Ohio, on the H. V. R. R. Operated by S. S. McDonald, Columbus, Ohio. W. G. Bennett, Clarion, Ohio, superintendent and mine boss. Drift opening into No. 4 seam of coal, 4 feet thick. Machine mining. Fan ventilation, double entry system. Employs 4 cutters, 44 loaders and 14 day hands. Visited December 14th. Mine had been idle since March 29, 1908,

and had only run coal one day when I visited the mine. Requested wire protected with boards and copper tamping tools secured. Stopped No. 24 room on 6 east ahead of air. Ordered second opening cleaned out and guard rail placed around fly wheel. Otherwise satisfactory.

Raccoon Valley.

Located at Minerton, on the H. V. R. R. Operated by John L. Lawler, Columbus, Ohio, who is superintendent. E. J. Lawler, Minerton, Ohio, mine boss. Drift opening into the No. 4 seam of coal, 4 feet thick. Double entry system, machine mining, fan ventilation. Employs 4 cutters, 34 loaders and 14 day men. Visited Feb. 10; mine in good condition. March 22nd, mine was idle; gave orders not to operate three machines until properly shielded. August 9th, new opening had been made and fan installed in it; ordered man door made at fan so miners would have access to second opening. Requested ditch opened on motor road in old hill. October 4th, requested door hung on north entry between 1 and 2 east; door on cut-off between 1 and 2 north; door on dark north between 1 and 2 west, and brick and cement brattices used in north entries in new hill; old hill satisfactory. December 15th, hoppers being moved to new opening, and men being moved from old hill to new hill as fast as territory is developed. Mine in good condition.

Mohr-Minton No. 3.

Located two miles from McArthur, Ohio, on the H. V. R. R. Operated by Mohr-Minton Coal Co., Columbus, Ohio. H. V. Atkinson, McArthur, Ohio, superintendent. Chas. B. Fry, same place, mine boss. Drift opening into No. 4 seam of coal, 4 feet thick. Double entry system, furnace ventilation. Employs 4 pick miners and 1 day hand. Coal is consumed at brick plant. Visited June 29th and December 13th. Mine in fair condition on each visit.

Mohr-Minton No. 4.

Located at same place and operated by same company as No. 3. J. M. Moor, McArthur, Ohio, superintendent. Wm. Crow, Elk Fork, Ohio, mine boss. Drift opening into No. 3 seam of coal, 5 feet thick. Double entry system, motor haulage, pick mining. Employs 70 pick miners and 14 day hands. Visited October 18th. Mine was closed down almost entire year. General conditions were fair.

Mohr-Minton Clay.

Located near coal mine. Operated and managed by same company as Nos. 3 and 4. Drift opening into a seam of clay 12 feet thick. Employs 5 pick miners and 1 day man. Product consumed at Mohr-Minton brick plant. Visited June 29th and December 13th; found in fair condition.

Puritan.

Located two miles east of Hamden, Ohio, on the H. V. R. R. Operated by the Puritan Brick & Cement Co., Hamden Junction, Ohio. Harry Cole, Hamden Junction, Ohio, superintendent. C. S. Cunningham, same place, mine boss. Drift, No. 4 seam of coal, 4 feet thick. Double entry system, pick mining, fan ventilation. Employs 8 pick miners and 3 day hands. Visited July 20th and September 28th. Mine in good condition on each visit.

Star No. 2.

Located at Hawks Station, Ohio, on the H. V. R. R. Operated by A. C. Tipton, receiver, Logan, Ohio. O. E. Edwards, Hawks, Ohio, superintendent and mine boss. Drift opening into No. 4 seam of coal, 4 feet thick. Single entry system, furnace ventilation. Employs 30 pick miners and 8 day lands. Visited February 10th. General conditions fair. Mine closed down shortly after my visit, and was suspended remainder of year.

Brick Yard.

Located near McArthur, Ohio, on the H. V. R. R. Operated by the McArthur Brick Co., McArthur, Ohio. D. A. Martindale, McArthur, Ohio, superintendent. Henry Meadows, same place, mine boss. Drift opening into the No. 4 seam of coal, 4 feet thick. Double entry system, furnace ventilation. Employs 18 pick miners and 5 day men. Visited February 3th, March 10th, June 28th, July 26th, September 27th and November 30th. Outside of haulage ways being submerged in mud and water the former part of the year, mine was in fair condition.

Tompkins No. 1.

Suspended entire year.

Raccoon Valley Nos. 1, 2 and 3.

Suspended the entire year.

Inghams.

Suspended entire year.

Outhwaite.

Abandoned.

GALLIA COUNTY.**Swan Creek.**

Operated by John Scherschel, Bladen, Ohio. Located twelve miles below Gallipolis, on the Ohio river. Employs 1 miner and 1 day man.

Scott's.

Operated by Alex. Scott, Cheshire, Ohio. Employs 2 miners and 1 day man.

Carls.

Located near Carlton, Ohio, on the H. V. R. R. Operated by the Riverside Coal Co., Carlton, Ohio. W. D. Edwards, Carlton, Ohio, superintendent. C. M. Little, same place, mine boss. Drift openings into the No. 8 seam of coal, 4 feet thick; furnace and natural ventilation. Employs 17 pick miners

and 7 day men. Visited August 10th. Mine has been on strike for 7 months, and was just starting up. Found in fair condition: December 1, mine had been idle almost entire time between visits. Working very little the entire year. Found in fair condition.

Jacobs.

Operated by Jacobs & Scott, Cheshire, Ohio. Employs 3 miners and 2 teamsters.

Rife.

Operated by Ellis Rife, Cheshire, Ohio. Employs 2 miners.

Big Bone.

Operated by V. E. Myers & Co., Gallipolis, Ohio. Employs 6 miners, 2 teamsters and 1 day man.

Luckeyes.

Operated by Jas. Blackburn, Cheshire, Ohio. Employs 2 miners.

Big Indian.

Operated by Albert Frashier, Carlton, Ohio. Employs 3 miners and 1 teamster.

THIRD DISTRICT

JNO. L. McDONALD.

COMPOSED OF THE COUNTY OF ATHENS.

Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio:

Dear Sir:—In accordance with the custom, I herewith submit for your consideration the annual report of the Third Mining District, for the year beginning January 1, 1909, and ending December 31, 1909.

With few exceptions, the mines worked very little the beginning of the year, but the gain in the last six months will make the tonnage exceed that of 1908. Business prospects for 1910 are encouraging, and confidence is expressed that the tonnage will exceed that of 1907, which was the banner year.

A large number of mines were suspended the fore part of the year, but resumed operation in the latter part. Seven remained suspended during the entire year. None were opened. One abandoned; and with few exceptions the mines were found in good condition.

I regret that I am compelled to report 9 fatalities in this district during the year. Two occurred in Nelsonville clay mine, by approaching a shot that held fire. The hole was charged with dynamite and powder. One by fall of rock in Edgell & Youngs mine, who produce coal for the Brick Company. Two in Hocking or Moor mine, by falls of slate. One in Doanville No. 1, by fall of splint coal and top. One in N. Y. No. 33, by colliding with empty cars while running motor. One in Sunday Creek No. 266, by falling in front of motor. One in a domestic mine on Jas. Bailey's farm, by fall of slate. A full report of these accidents has been made, and will appear in another part of the report. A thorough investigation showed that with but one or two exceptions, which were unavoidable accidents, the victims met death through carelessness.

I regret that the Department found it necessary to issue a specific order, in order that the law providing copper tamping tools should be enforced, as they afford greater safety when in use. One accident occurred this year previous to the adoption of these tools. In New York No. 31, Miles and Albert Moor, brothers, were tamping a hole charged with 12 inches of powder, and they claim when pushing up the first tamping, which was a handful of slack, the powder ignited, the force mostly going from them, due to the fact that the shot was in a breakthrough and was mined through at the bottom. After the coal was loaded out, the hole along the rib showed sulphur about 16 inches from the back of the hole. Fortunately, they were only slightly injured.

Opposition was also met in regard to the proper shielding of mining machine chains—another precaution against danger. Two serious accidents occurred on the Goodman machine during the year. The shield on this machine has not yet reached perfection. A number of machine men have informed me that the shield has been the cause of saving their lives since the law has been in effect.

No accidents have occurred from coming in contact with electric wires. The new laws, which are fairly well observed, have done much to lessen the dangers of mining, and it is hoped that the Mining Commission will recommend necessary laws to avoid future calamities.

A large per cent. of the operators of this district desire to keep their mines in the best possible condition, and such is the case where the management observe the mining laws and rules of the Department and see to it that others do so, but where the management disregards the law and rules it encourages others to do the same, resulting in no discipline at all. We cannot too strongly emphasize the fact that thorough discipline exercised in the operation of a mine is absolutely essential to safety, and that discipline can

be brought about only through the hearty co-operation of the operators, the miners and the State Department. We are of the opinion that the responsibility for safety in mines should primarily rest with the management, clothed with full authority, and more foremen and also inspectors employed, whose special duty it should be to see that the regulations are strictly enforced.

The Sunday Creek Company, which produces about 60 per cent. of the coal of this district, employs two inspectors, whose special duties require them to make daily inspections of the mines, and good results are obtained. The mines are generally in good condition. Fifteen (15) fatalities have been credited to this company in the last five years, an average of three for each year. With from three to four thousand employes, the average is less than one fatality for every one thousand persons employed. A number of smaller companies have fully as good a record, and are commended for the care exercised; and my only regret is that it could not be made general.

We realize that much has been done in recent years to lessen the dangers and to improve the conditions of mining. Large steam-driven fans have been installed, and a large number of electric fans have been eliminated, which have been a source of annoyance, and should all be removed from the mines. Overcasts are being used to split the current and increase the intake, which also lessens the number of doors on the main haulage roads. Quite a number of these improvements have been made during this year. Brick and concrete are used mostly for brattice work. Boiler cinders are largely used for ballasting the haulage roads, since the removal of the machine cuttings from the mine.

The most notable improvement in the mines of this district during the year has been the rebuilding of the underground stables, in particular the Sunday Creek and New Pittsburg mines. Great care has been taken to make them as near fireproof as possible, and all entrances provided with masonry and iron doors, made as near air-tight as possible, to guard against internal and external fires, and none but incandescent lights to be used, with strict regulation rules to apply.

In conclusion, I desire to say that my relations with both miners and operators have been of the most pleasant character, and that I appreciate the kindly co-operation of both. Thanking you for your ever-ready assistance and advice,

Respectfully,

JNO. L. McDONALD, Glouster, Ohio.

December 31st, 1939.

Inspector Third District.

ATHENS COUNTY.

Sunday Creek Company's Mines.

Note—D. H. Williams, Athens, Ohio, is district superintendent for the Sunday Creek Company, Columbus, Ohio, in the Sunday Creek Valley and the Sugar Creek mines; Francis Payne, inspector. R. S. Weltzell, Nelsonville, Ohio, for all mines in the Hocking Valley; Frank Knox, Nelsonville, Ohio, inspector.

Sunday Creek No. 10.

Located two miles west of Glouster, Ohio, on the K. & M. R. R. Operated by Sunday Creek Co., Columbus, Ohio. J. F. Roberts, Glouster, Ohio, superintendent. Walter Hayden, same place, mine boss. Shaft opening, 110 feet deep, to the No. 6 seam, 6 feet thick. Double entry system, fan ventilation. Equipped with electric machinery. Employs 165 loaders, 20 machine men and 70 day men. January 5th, visited to investigate the cause of an explosion of 19 kegs of powder at the bottom of shaft. The powder had been lowered into the mine after quitting time, to be delivered before the power was on the wires; owing to some neglect, the powder remained on the bottom until the power was turned on, and a fall of roof brought the wires in contact with the powder, igniting it. No one was injured, nor any damage done. January 8th, found satisfactory on north side, except the wiring; requested that same be placed in compliance with the law. February 15th, south side found satisfactory. April 30th, north side in good condition. May 3d, south side in good condition. August 3d and 6th, both sides found satisfactory, except Room No. 20 on 9th west not in safe condition on account of insufficient timber; advised that the men not be allowed to work until it could be made safe; also ordered that all old tamping tools be taken out of mine. November 9th, both sides were found in good condition.

10-X.

Located near Orbiston, O., on the H. V. R. R. Operated by the Sunday Creek Co., Columbus, O. Wm. Bernell, R. D. No. 5, Glouster, O., superintendent; C. C. Gartic and Roy Easterling, Orbiston, O., mine bosses. Slope opening to No. 6 seam of coal, 6 ft. thick; worked on the double and triple entry system; fan ventilation; coal is cut by electric power; motor haulage; 200 loaders, 18 machine men, 54 day men employed. May 18th, west side in poor order; ventilation deficient on account of bad doors and stoppings; wiring poor; roads submerged in mud and water; ordered matters complained of given prompt attention. June 2d, found east side in fair condition, except the ventilation, which was wasting through bad stoppings; requested same repaired, also two Goodman machines put out of commission until properly shielded. July 16th, in fair condition. September 21st, called to test the scales; found correct. October 8th, mine idle; made no inspection of the interior, only the air courses, which were found clear. October 27th, found conditions fair. November 5th, west side, requested check placed between Rooms Nos. 11 and 12 on 6th west, also trapper placed at southeast territory. This side of mine is almost exhausted.

No. 201.

Located at Floodwood, O., on the H. V. R. R. Operated by the Sunday Creek Co., Columbus, O. Asa Hammond, Nelsonville, O., superintendent; Geo. Nash, Floodwood, O., mine boss. Shaft opening, 90 feet deep to No. 6 seam, 6 feet thick; worked on double entry system, ventilated by fan. Mine is equipped with electric mining machines and motor haulage. 100 loaders, 10 machine men, 53 day men employed. May 20th, requested check placed on 5th East and dust removed from tracks and gobs; otherwise conditions satisfactory. August 24th, found satisfactory, with the exception of breakthroughs; ordered that all breakthroughs between rooms be cleaned out. November 29th and 30th, found timber supply short on 10th west; also underground stable was poorly arranged, as it necessitated the men working on north side of the mine passing through it in order to reach bottom; requested that all traffic, except that absolutely necessary, through the stable be stopped, and stable sealed to make it as near air tight as possible. The mine is generally kept in good condition.

No. 203.

Situated near Old Floodwood, O., operated by the Sunday Creek Co., Columbus, O. Frank Murphy, Nelsonville, O., has supervision. Drift opening, to No. 6 seam of coal, which is 6 feet thick. Ventilated by fan. Coal is mined and hauled by electric power. Employs 72 loaders, 6 machine men, 42 day men. March 5th, May 19th, September 2d and December 2d, inspections were made and conditions as good as could be expected, owing to the mine being rapidly exhausted. On each inspection, requested a good supply of timber kept at all working places on account of the work being mainly pillar. September 2d, requested 9th and 10th west entries cross-timbered in places.

No. 204.

Situated near Kimberly, O., on the H. V. R. R. Operated by the Sunday Creek Co., Columbus, O. Jos. Barber, Nelsonville, O., superintendent and mine boss. Drift opening, No. 6 seam, 6 feet thick; double entry system; ventilated by fan; coal is cut and hauled by electric power; 140 loaders, 14 machine and 67 day men employed. June 18th, September 10th, December 1st, inspections were made, and mine found in good order. Mine suspended fore part of year. A large steam fan is being erected, which will displace the electric fan located in the mine. This will be a great improvement.

No. 205.**ABANDONED.****No. 209.**

Located on Sugar Creek, about 4 miles north of Athens, O., on the H. V. R. R. Operated by the Sunday Creek Company, Columbus, O. Wm. Altman, Athens, O., superintendent and mine boss. Shaft, 260 feet deep, No. 6 seam, 4 to 6 feet thick; double and triple entry system; ventilated by fan; coal is mined by electric power and motor haulage. June 22d, conditions satisfactory; no standing gas was found in any part of the mine. October 6th and 7th, in good order, except ordered speaking tubes in main shaft renewed. Suspended fore part of year.

No. 210.

Remained suspended during the entire year.

No. 211.

Located on Sugar Creek, three and one-half miles northeast of Athens, O., on the H. V. R. R. Operated by the Sunday Creek Co., Columbus, O. Herman Tyson, Athens, O., superintendent; Jno. Clark, same place, mine boss. Shaft opening, 240 feet deep, to No. 6 seam of coal, $5\frac{1}{2}$ feet thick. Worked on double and triple entry system. Ventilated by fan. Coal cut and hauled by electric power. Employs 213 loaders, 13 machine and 85 day men. January 19th, tested scales; found correct. March 11th and 12th, conditions satisfactory, except electric wires and machines were not properly guarded. Requested same done at once. July 1st and 2nd, in good condition. Ordered wires taken out of last breakthroughs in rooms on 4th west north. September 29th and 30th, conditions good. The mine generates considerable gas, but is well taken care of. No standing gas was found on any visit.

No. 212.

Located on Sugar Creek, about $4\frac{1}{2}$ miles northeast of Athens, Ohio, on the H. V. R. R. Operated by the Sunday Creek Co., Columbus, Ohio. Harry Cunningham, Chauncey, Ohio, superintendent and mine boss. Shaft, 301 feet deep, No. 6 seam, 3 to 6 feet thick. Double entry system, fan ventilation. Coal is mined with electric power; 13 loaders, 2 machine and 6 day men employed. The mine has been developed very little during the year on account of faults. What coal is being mined is hoisted at the air shaft. There is no effort made to erect a tippie over the main shaft. The irregular thickness of the seam and the tender strata between the rock and coal makes it very discouraging. March 12th, found in good order. July 2nd, found satisfactory, except the ventilation, which was not reliable, on account of location of fan. September 17th, conditions were good. The fan was repaired and location changed to main shaft.

No. 252.

Remained suspended during the entire year.

No. 254.

Situated near Jacksonville, Ohio, on the K. & M. R. R. Operated by the Sunday Creek Co., Columbus, Ohio. Daniel McBride, Glouster, Ohio, superintendent. Pat McCann, Jacksonville, Ohio, mine boss. Shaft opening, 110 feet deep, to No. 6 seam of coal, 6 feet thick. Coal is mined with electric power. Equipped with rope haulage. Has fan ventilation; 146 loaders, 18 machine and 52 day men employed. April 29th, requested that the speed of the fan be increased and dust removed from main haulage roads, and machines not operated until properly shielded. Otherwise, conditions satisfactory. July 27th, found ventilation improved, machines shielded and dust sprayed some on main entry. Requested wires removed from the face of 18th west entry, and that the following rooms be stopped, which were beyond the limit without breakthroughs: 2 and 3 on 18th west cut-off; 6 and 7 on the 12th east. October 23th, found in good condition.

No. 255.

Located about $2\frac{1}{2}$ miles southwest of Jacksonville, Ohio, on the K. & M. R. R. Operated by the Sunday Creek Co., Columbus, Ohio. Robert Snyder, Glouster, Ohio, superintendent. Carl Feirce, same place, mine boss. Shaft opening, 150 feet deep, to No. 6 seam of coal, 6 feet thick. Worked on double entry system. Ventilated by two fans. Electric mining and motor haulage; 200 loaders, 20 machine and 57 day men employed. March 15th, found conditions satisfactory, except wiring and machines not shielded. Requested machines not to be operated until properly shielded and the wires changed to comply with the law. June 16th, found in good condition. Requested check placed on 4th east south between rooms Nos. 8 and 9. September 8th, in good condition. December 20th, ordered dust and falling coal removed from haulage roads. Mine generally was found in good order.

No. 256.

Located at Glouster, Ohio, on the K. & M. R. R. Operated by the Sunday Creek Co., Columbus, Ohio. D. S. Williams, Jacksonville, Ohio, superintendent. Thos. Hope, Glouster, Ohio, mine boss. Shaft opening, 90 feet deep, to No. 6 seam of coal, 6 feet thick. Worked on double and triple entry system. Fan ventilation. Coal mined and hauled with electric power. February 16th and 17th, requested check placed between 15 and 16 rooms on 5th west. Also dust removed from haulage ways. Otherwise, in good order. May 10th and 12th, found satisfactory, except ventilation on 4th west cut-off. Requested that it be increased or the men taken out. August 5th and 9th, requested checks placed between rooms Nos. 34 and 35 on 3rd west and ventilation increased on 9th west. November 3rd and 4th, found in good condition generally. The mine is well managed and kept in good order. December 10th, visited mine on complaint of mine committee, to investigate the southwest side of No. 252 mine, which lies adjacent and is connected in a number of places, and a portion of the 2nd and 3rd wests in No. 252, which were sealed in 1900 on account of fire. In 1905 the tippie burned and in 1907 both mines were flooded. During all this period mine No. 252 had not operated. We inspected the portions complained of in company with Mr. D. H. Williams, district superintendent, mine officials and committee, and found that the flood had broken the seal around the fire territory and no indication of any fire could be detected. A good current of air was passing close, and passing out at No. 252 air shaft, at which point Mr. Williams agreed to erect a stairway for an escape for the men on the north side of No. 256.

No. 266.

Located at Hollister, Ohio, two miles west of Glouster, on the K. & M. R. R. Operated by the Sunday Creek Co., Columbus, Ohio. Jno. Collins, Glouster, Ohio, superintendent and mine boss. Shaft opening, 90 feet deep, to No. 6 seam of coal, which is 6 feet thick. Double and triple entry system. Ventilated by fan. Electric mining and haulage; 200 loaders, 21 machine and 56 day men employed. February 18th, May 11th, in good order. August 4th, found some breakthroughs in rooms obstructed with gob; also requested air increased in room No. 19 on 13th west; otherwise mine in good order. August 18th, was called to investigate the death of Jos. Hopper, motor rider, who was killed by falling in front of the motor. The boy was never known

to ride the front end of the motor before, and it is supposed that he attempted to get off and run ahead to throw a switch at 5th west. September 25th, visited mine on complaint of miners, to investigate the accumulation of dust and falling coal along motor haulage roads. Found considerable dust and falling coal. Ordered roads thoroughly cleaned without any interference on part of the miners in regard to the persons employed by the management to clean them. By the former arrangement the turn keepers were responsible for cleaning the roads for the falling coal, but owing to the cars being very much open and the immense accumulation, they refused to load the dust with the coal. November 18th, mine was in good condition.

No. 267.

Located three miles northwest of Gloucester, Ohio, on the K. & M. R. R. Operated by the Sunday Creek Co., Columbus, Ohio. John Yaw, Gloucester, Ohio, superintendent. Phil Blower, same place, mine boss. Slope opening, 450 feet in length, to No. 6 seam of coal, 6½ feet thick. Worked on double and triple entry system. Fan ventilation; electric mining and haulage; 186 loaders, 20 machine and 62 day men employed. Mine was suspended from December 18, 1908, to July, 1909. July 21st and October 25th, mine was found in good condition.

Nos. 275, 281, 311 and 312.

Remained suspended during the entire year.

New Pittsburg No. 9.

Located about one mile southwest of Chauncey, Ohio, on the H. V. R. R. Operated by the New Pittsburg Coal Co., Columbus, Ohio. Geo. Butts, Nelsonville, Ohio, superintendent. Wm. Snowden, same place, mine boss. Shaft opening, No. 6 seam, 6 feet thick. Coal mined with electric power. Equipped with motor haulage; fan ventilation; 247 loaders, 20 machine and 57 day men employed. Mine was suspended during the fore part of the year. August 23rd and November 16th, found in good condition. except requested that ventilation be increased on 1st east cut-off.

New Pittsburg No. 10.

Located three miles north of Athens, Ohio, on the H. V. R. R. Operated by the New Pittsburg Coal Co., Columbus, Ohio. Jos. Slater, Athens, Ohio, superintendent. Fred Slater, same place, mine boss. Shaft opening to No. 6 seam, 5½ feet thick. Double and triple entry system; fan ventilation; electric mining and haulage; 169 loaders, 13 machine and 52 day men employed. March 17th, found satisfactory, except requested wires changed, to comply with law. June 21st and August 30th, found conditions satisfactory. August 7th, was called to test the scales, which were found correct. December 7th, requested fan speeded up and doors repaired in north end of mine; otherwise mine in good order.

New York, Halbert or Shafer, New Opening.

located at old Floodwood, Ohio, on the H. V. R. R. Operated by Woody ley, Nelsonville, Ohio. A. L. Woody, Nelsonville, Ohio, superintendent

and mine boss. Slope opening, No. 6 seam, 4½ feet thick. Double entry system, furnace ventilation; pick mining; rope haulage; 28 miners and 4 day men employed. December 2nd, in fair condition. Suspended from March, 1907, until November of this year.

New York No. 31.

Located near Buchtel, Ohio, on the H. V. R. R. Operated by the New York Coal Co., Columbus, Ohio. P. C. Morris, Nelsonville, Ohio, superintendent. E. G. Woody, same place, mine boss. Drift opening, No. 6 seam, 6 feet thick; double and triple entry system; fan ventilation; coal is mined and hauled with electric power; 200 loaders, 22 machine and 57 day men employed. March 29th, requested that a trapper be placed at 3 and 4 south entries, also 3rd north. Miles and Albert Moor, brothers, were injured by a premature explosion of powder while tamping a hole. The tamper, which was iron, came in contact with sulphur near the cartridge. July 13th, in fair condition. August 11th, visited mine in company with chief inspector. Geo. Harrison, to investigate a new system of room work and breakthroughs, which were made at 120 feet distance in each pillar, zigzag style, and each room breast 48 feet in width. Ventilation was good, and was conducted within 60 feet of the working face. This system was approved. October 13th, was called to investigate air conditions in rooms Nos. 11 and 12 on 5th east, in which one of the mine committee worked; found a good current of air passing within 60 feet of the face and no occasion for any complaint. Requested that a check be placed between 9 and 10 rooms on 5th east. The mine generally is found in good condition.

New York No. 33.

Located near Buchtel, Ohio, on the H. V. R. R. Operated by the New York Coal Co., Columbus, Ohio. P. C. Morris, Nelsonville, Ohio, superintendent. A. E. Harold, same place, mine boss. Drift opening to the No. 7 seam of coal, 5 feet thick; double entry system; coal is mined and hauled with electric power; fan ventilation; 57 loaders, 4 machine and 13 day men employed. January 4th, conditions fair, except wires; requested them changed to comply with the law. March 31st, found satisfactory, except the machines; ordered them stopped until properly shielded. July 12th, ventilation insufficient on account of the fan being too small and not properly located. Requested that a larger fan be installed and another opening made. August 19th, investigated death of Edwin Harold, who was injured by his motor colliding with a trip of empty cars on the 10th and died the 18th. October 22nd, found new air shaft sunk and larger fan installed at the bottom and mine generally in good condition.

Luhrig Nos. 1, 2 and 3.

Located at Luhrig, Ohio, on the B. & O. S. W. R. R. Operated by the Luhrig Coal Co., Cincinnati, Ohio. Sherman Shull, Luhrig, Ohio, superintendent. John Gibbs, same place, mine boss. Shaft opening, 150 feet deep, No. 6 seam, 5 to 8 feet thick. Double entry system, fan ventilation, electric mining and motor haulage; 316 loaders, 30 machine and 140 day men employed. January 27th, in fair condition. Ordered the machines stopped until properly shielded. August 31st and December 8th, found in good condition. The above inspections were made on the No. 3 side, which was suspended the fore part

of the year. The following inspections were made in Nos. 1 and 2: January 28 and 29, found in good order. The machines were stopped on account of having no shields over the chains. May 26th and 27th and September 1st, also found in good order. December 14th, requested the steps cleaned and made more convenient for travel, as they were obstructed with ice. Otherwise, conditions throughout the mine were satisfactory.

Canaanville No. 1.

Located at Canaanville, Ohio, on the B. & O. S. W. R. R. John Kyte, Athens, Ohio, superintendent, succeeded by Geo. Welsh, Canaanville, Ohio. P. H. Burns, same place, mine boss, succeeded by Chas. Coleman, Athens, Ohio. Shaft opening, 450 feet deep, No. 6 seam, $4\frac{1}{2}$ to 6 feet thick. Double and triple entry system. Ventilated by fan; equipped with electric machinery, both haulage and gathering motors; 120 loaders, 16 machine and 77 day men employed. March 18th, found in good condition; also June 24th. July 3rd, visited mine to investigate complaint of miners in regard to refusing to be lowered at main shaft, which is equipped with an electric hoist. The men took the position that it was unlawful to ride the same. September 16th, October 1st and December 9th and 15th, found mine in good condition. On last date, ordered that the signal at steam hoist be arranged more convenient for the engineer. The mine generates considerable gas, but is well taken care of.

Hocking or Moor.

Located at Carbondale, Ohio, on a branch of the B. & O. S. W. R. R. Operated by the Hocking Mining Co., Athens, Ohio. G. W. Arnold, Carbondale, Ohio, superintendent. Jas. Gascoyne, same place, mine boss. Slope opening, No. 6 seam, $4\frac{1}{2}$ feet thick. Double entry system, fan ventilation. The coal is cut by electric power. Equipped with both gathering and haulage motors; 142 loaders, 16 machine and 51 day men employed. April 9th, made partial inspection. Was called to another mine on account of a fire. Requested machines stopped until properly shielded. May 6th, was called to investigate the death of Henry Thompson, a miner, who was killed by a fall of roof at the face of No. 8 room on 5th east. Conditions throughout the mine were found satisfactory. August 13th, found in good condition. August 26th, investigated death of Marvin McWharter, who was killed by a fall of slate at the face of No. 24 room on 4th east. November 23rd, found in good condition. The mine in the last two years has worked into very bad top, and great care and attention has been given on part of the company and management. An extra man has been engaged to look after the safety of the men, but unfortunately we are compelled to report these two accidents.

Winchester.

Located at Carbondale, Ohio, on the B. & O. S. W. R. R. Operated by Wm. Shingler, Mineral, Ohio, who is superintendent and mine boss. Slope opening, No. 6 seam, $4\frac{1}{2}$ feet thick. Double entry system. Equipped with electric power; fan ventilation; 4 loaders, 2 machine and 4 day men employed. August 12th, found the ventilation, drainage and wiring bad. Ordered that the mine be placed in a lawful condition as soon as possible. November 23rd, found order not complied with. Ordered that the mine cease operation at once, which was complied with.

Carbondale No. 2.

Located at Carbondale, Ohio, on B. & O. S. W. R. R. Operated by the Carbondale Coal Co., Carbondale, Ohio. M. H. Doolittle, superintendent. Ford Doolittle, mine boss. Both of Carbondale, Ohio. Drift, No. 6 seam, 5½ feet thick. Double entry system. Ventilated by fan; coal cut with electric power and motor haulage; 90 loaders, 12 machine and 24 day men employed. April 8th, found in good order. July 8th, found satisfactory. A new 8x4 ft. Jeffrey type fan is being installed, which is the latest improved and the most efficient of mine fans. Brick is being used for stoppings. The mine is being made modern in every respect. October 21st, mine generally was found in good condition. New fan in operation and giving the best of results.

Carbondale No. 3.

Located at Carbondale, Ohio, on B. & O. S. W. R. R. Operated by the Carbondale Coal Co., Carbondale, Ohio. M. H. Doolittle, superintendent. Jacob Pollock, mine boss. Both of Carbondale, Ohio. Drift opening, No. 6 seam, 4½ feet thick; double entry system; coal is cut with electric power; equipped with motor haulage; ventilated by fan; 60 loaders, 6 machine and 25 day men employed. April 7th, July 7th and October 21st, found general conditions satisfactory.

Hisylvania No. 23.

Located at Trimble, Ohio, on the K. & M. R. R. Operated by the Hisylvania Coal Co., Columbus, Ohio. Enoch Blower, Trimble, Ohio, superintendent. Chas. Jonas, Glouster, Ohio, mine boss. Slope opening, 450 feet in length, No. 6 seam, 6 feet thick; double entry system; fan ventilation. Coal is mined and hauled with electric power; 101 loaders, 8 machine and 33 day men employed. January 21st, April 28th, July 26th and October 29th, found mine in excellent condition.

Northern Fuel No. 24.

Located one mile southwest of Jacksonville, Ohio, on K. & M. R. R. Operated by Chas. Cohenour, receiver for the Northern Fuel Co., Columbus, Ohio. D. L. Wallace, Glouster, Ohio, superintendent. Jno. Cox, Trimble, Ohio, mine boss. Shaft opening, 107 feet deep. No. 6 seam, 6 feet thick. Double entry system; fan ventilation; coal is mined with electric power; equipped with motor haulage; 190 loaders, 18 machine and 54 day men employed. February 19th, a number of places had to be stopped on account of not having breakthroughs at the proper distance; also requested the ventilation increased or force reduced. February 25th, ventilation was not increased, and the force was reduced in proportion to the amount of air in circulation. May 4th and 7th, in fair condition. July 20th, requested wires taken out of breakthroughs next the face of working places; also check placed between rooms Nos. 9 and 10 on 2nd west. October 26th, in fair condition, except found the way leading to escapement shaft badly obstructed with water and falls. Ordered same cleared at once. November 1st, visited mine on account of order given on previous date and found conditions satisfactory.

Bailey Run.

Located about one mile south of Jacksonville, Ohio, on K. & M. R. R. Operated by the Bailey Run Coal Co., Corning, Ohio. Chas. Monsarrat, Corning,

Ohio, has full supervision. Slope opening, 150 feet in length; No. 7 seam, $4\frac{1}{2}$ feet thick. Double entry system; ventilated by fan; equipped with electric power; rope haulage in slope; 12 loaders, 2 machine and 4 day men employed. February 23rd, found in good condition. August 20th, suspended, but were making preparations to resume operations. October 4th, in good order.

Sedalia No. 14.

Remained suspended the entire year.

Eclipse No. 3.

Situated about three miles northwest of Athens, Ohio, on the H. V. R. R. Operated by the Lorain Coal & Dock Co., Columbus, Ohio. John Taylor, Athens, Ohio, resigned as superintendent and was succeeded by John Moorefield, same place. Carl Miller and John Brewer, Athens, Ohio, mine bosses. Shaft opening 187 feet deep; No. 6 seam 6 feet thick; double and triple entry system; fan ventilation. Coal is mined with electric power; equipped with motor haulage; 206 loaders, 22 machine and 68 day men employed. March 3rd and 4th, requested checks placed between rooms Nos. 1 and 2 on 3rd west; also 1 and 2 on 5th west. Otherwise, conditions satisfactory. May 28th and June 3rd, conditions fair. June 30th, requested signal placed on rear end of motor trips. October 5th and December 27th, mine found in good condition.

Imperial.

Situated near Myers Crossing on the H. V. R. R. Operated by Imperial Coal Mining Co., Columbus, Ohio. J. A. Murphy, Nelsonville, Ohio, superintendent. Mr. Murphy died, and was succeeded by Wm. Murphy, who resigned. Also G. Barber, mine boss. Perl Berrel, Nelsonville, Ohio, has supervision at present. Drift opening, No. 6 seam, $5\frac{1}{2}$ feet thick. Double entry system; fan ventilation; electric mining and haulage; 150 loaders, 14 machine and 50 day men employed. March 2nd, found in fair condition, except requested wires changed to comply with the law; also the 1st and 2nd east south and 1 and 2 north timbered more securely, as the top is very tender. July 14th, found considerable loose stone and slate on haulways. Requested same given prompt attention; also ventilation increased. October 15th, found idle. October 20th, in fair condition. December 30th, visited the mine on complaint of miners, to investigate air condition, which was found deficient throughout the mine on account of the air course being closed in by a large fall. They began work immediately to get around it.

Juniper No. 1.

Located at Buchtel, Ohio, on the H. V. R. R. Owned by York Clay & Mining Co., Nelsonville, Ohio. Operated by Geo. McKee, same place, who has the mine leased and has supervision. Drift opening, No. 7 seam, 5 to 6 feet thick. Double entry system; furnace ventilation; coal is mined with electric power; mule haulage; 19 loaders, 2 machine and 4 day men employed. September 9th, found mine suspended since the first of the year. Is now being put in condition to operate. November 22nd, ordered new escapement way made and safety device arranged at the bottom of incline. Otherwise, conditions satisfactory.

Juniper No. 2.

Located at Buchtel, Ohio, on the H. V. R. R. Operated by the York Clay & Mining Co., Nelsonville, Ohio. J. J. Meenan, Nelsonville, Ohio, superintendent; Hugh Mallen, Kimberly, O., mine boss. Drift, No. 6 seam, $4\frac{1}{2}$ to 6 feet thick; double entry, fan ventilation; coal is cut with electric power, and equipped with motor haulage. Employs 75 loaders, 6 machine and 26 day men. January 14th, February 15th, July 22nd, October 19th and December 22nd, inspections were made and mine found in fair condition.

Maple Hill.

Located three miles northeast of Nelsonville, O., on the H. V. R. R. Operated by Maple Mining Co., Nelsonville, O. Geo. Silcott, superintendent; Thos. Matheny, mine boss, both of Nelsonville, O. Drift opening, No. 6 seam, 6 feet thick; coal is mined mostly with electric power. Rope haulage; 38 loaders, 2 machine and 15 day men employed. March 30th, June 1st, July 23rd and October 14th, mine in fair condition, considering the mine is almost exhausted. The company is negotiating for a tract of coal that lies adjoining, and if fortunate enough to secure it, the life of the mine will be extended.

Doanville No. 1.

Located near Myers Crossing on the H. V. R. R. Operated by the C. & H. C. & I. Co., Columbus, O. R. E. McLain, Nelsonville, O., superintendent; Wm. Raybould, same place, mine boss. Slope opening, No. 6 seam, $5\frac{1}{2}$ feet thick; double entry system, fan ventilation; coal is mined with electric power; rope and motor haulage; 121 loaders, 10 machine and 64 day men employed. May 21st, ventilation in old south deficient; requested that the men be taken out until the current could be improved; doors and brattices were in bad order. July 28th, investigated death of August Osey, who was killed by a fall of splint coal and roof while drawing entry stumps on the old Doanville entry. September 14th, found satisfactory, except requested more efficient shields placed on the machines. December 3rd, found in fair condition.

Doanville No. 1-a.

Located at the same place as No. 1, owned and operated by the same company. R. E. McLain, Nelsonville, O., superintendent; Jno. Burns, same place, mine boss. Drift opening, No. 7 seam, $5\frac{1}{2}$ feet thick; double entry system; fan ventilation; coal is cut with electric power; mule haulage; 30 loaders, 4 machine and 6 day men employed. May 24th, requested wires changed to comply with the law. Mine was suspended the first four months of the year. September 13th, found in fair order; requested that the first and second wests be driven to the crop for ventilation and escapement way for the men. November 24th, ventilation deficient; requested the force reduced until new opening was made, the same being complied with.

Poston No. 65.

Located at Nelsonville, O., on the H. V. R. R. Operated by J. M. Lana, Nelsonville, O., who is superintendent; L. G. Dollison, Logan, O., mine boss. Drift opening, No. 6 seam, pick mining, natural ventilation; mule haulage;

20 pick miners and 6 day men employed. Pillars and entry stumps are the extent of the operation. June 1st and December 21st, found in fair condition.

Black Diamond.

Located at Lathrop, O., on the M. C. & C. R. R. Operated by the Black Diamond Coal & Coke Co., Columbus, O. A. E. Lafferty, Sharpsburg, O., superintendent; Thos. O. Day, same place, mine boss. Drift opening, No. 8 seam, 8 feet thick; double entry system, fan ventilation; coal is mined with electric power; equipped with motor haulage; 52 loaders, 6 machine and 22 day men employed. April 27th, and August 17th, conditions found satisfactory. November 15th, the passage way leading to the escapement shaft was found unavailable on account of water and falls; requested operations to cease until the escapement way could be made available. November 19th, was called by company and found the passage leading to the escapement way in such condition as to be available for passage without much difficulty, and three shifts employed at work on a new opening; permission was given to operate the mine with a full complement of men. December 18th, found new opening made and other conditions satisfactory.

Broadwell.

Located at Broadwell, O., on the M. C. & C. R. R. Operated by the Federal Coal Co., Marietta, O. O. B. Gard, Marietta, O., superintendent; D. D. Smith, Broadwell, O., mine boss. Slope opening, No. 8 seam, 4 to 8 feet; double entry system, fan ventilation; coal is mined with electric power; equipped with rope haulage; 28 loaders, 4 machine and 6 day men employed. On February 22nd, June 4th, August 25th and November 26th, found in good condition.

Federal Valley No. 1.

Located at Broadwell, O., on the M. C. & C. R. R. Operated by the Federal Hocking Coal Co., New Lexington, O. J. C. Adams, New Lexington, O., superintendent and mine boss. Slope opening, No. 8 seam, 5 feet thick; double entry system, fan ventilation, electric mining, rope haulage; 13 loaders, 2 machine and 7 day men employed. February 22nd, found suspended. August 25th, was being placed in condition for operation. November 17th, in bad condition on account of the long idleness; found management doing everything in their power to place the mine in a lawful condition. Requested a door placed at bank mouth to check the waste air, and wires changed to comply with the law.

Carbon, or Peacock.

Located at Lathrop, O., on the M. C. & C. R. R. - Operated by the Carbon Coal Mining Co., Amesville, O. T. E. Clark, Amesville, O., superintendent and mine boss. Drift opening, No. 8 seam, 6 to 7 feet thick, with a natural strata of gray slate in the center 14 inches in thickness; double entry system, fan ventilation. Coal is cut with electric power; mule haulage; 30 loaders, 2 machine and 7 day men employed. April 5th, conditions satisfactory; requested machine stopped until properly shielded, also some safety device placed at bottom of incline for protection to those employed there in case the trip would get away. June 29th, found requests carried out. Mine was idle. August 16th and November 15th, found suspended on account of lack of trade.

Schuler.

Located at Sharpsburg, O., on the M. C. & C. R. R. Operated by Jacob Schuler, same place, who has entire supervision. Drift opening, No. 3 seam, 7 to 8 feet thick; separated with a natural strata of 14 inches of slate. Double entry system, natural ventilation; electric mining; mule haulage; 10 loaders, 2 machine and 2 day men employed. June 28th, September 7th, found in fair condition.

Silcott.

Located at old Floodwood, O., on the H. V. R. R. Operated by Geo. Silcott, Nelsonville, O., who is superintendent; O. M. Reynolds, Floodwood, O., mine boss. Drift openings, No. 6 seam, six feet thick; furnace and natural ventilation. Coal is mined with picks; 10 miners and 5 day men employed, who are drawing stumps in several openings along the crop. July 6th, found in fair condition.

ATHENS COUNTY.**SMALL MINES EMPLOYING LESS THAN TEN MEN.****Wells, New Opening.**

Located at Kimberley, O., H. V. R. R. Operated by J. M. Lama, Nelsonville, O., who has supervision. Slope opening, No. 6 seam, 6 feet thick, pick mining, furnace ventilation; 6 miners and 2 day men employed. March 5th, requested men taken out until an escapement way could be made and mine properly ventilated, as conditions were bad. June 1st and November 30th, found in fair order, with new opening and small fire-place at the bottom.

Pigskin.

Located at Nelsonville, O., T. S. Rosser, same place, operator and mine manager. Employs 9 to 11 men. Nelsonville Brick Co. consumes the output. Electric mining, mule haulage, and on June 17th, September 15th and December 23rd, found conditions fair.

Edgell & Young.

Located at Nelsonville, O., operated by Edgell & Young. The output is consumed by the Nelsonville Brick Co. Drift opening, No. 6 seam, 4½ feet thick; natural ventilation; employs 9 men; machine mining. June 17th, investigated the death of Pearl Anders, who was killed by a fall of rock at the face of No. 5 room on 1st west. The place had been poorly timbered. Mine found in fair order. September 15th, mine suspended, also December 23rd.

Glouster Domestic.

Located at Glouster, O. Operated by Sydney Hilditch, same place, who is superintendent and mine boss. Shaft opening, 48 feet deep, No. 7 seam, four feet thick; double entry; ventilated by fire basket; pick mining; 6 pick miners and 2 day men employed. The coal is mostly consumed by home trade. Some is transported by the K. & M. R. R. February 23rd, mine was suspended. July 8th, found in fair order. October 2nd, tested scales, found correct.

Bailey, Domestic Mine.

Located about 6 miles southeast of Athens, O., on Jas. Bailey's farm. Operated by Jas. Bailey, Athens, O. Two men employed. September 20th, was called to investigate the death of Chas. Frost, who was killed by fall of slate while working at the face of a room near the crop.

ATHENS COUNTY.**CLAY MINES.****Nelsonville Clay, Nos. 1 & 2.**

Located at Nelsonville, O., on the H. V. R. R. Operated by the Nelsonville Brick Co., Nelsonville, O. Jos. Ruscoe, same place, has supervision. Drift opening, No. 5 seam, 7 to 10 feet thick; motor and mule haulage; fan ventilation; 21 miners, 11 day men employed. June 17th, requested that some artificial means of ventilation be installed, as the two mines since connected are too large for the natural atmospheric pressure to give satisfaction. One side is suspended. September 15th, found conditions satisfactory, except the ventilation. Arrangements are to be made to install a fan. September 23rd, investigated the death of Samuel Coakley, and son Harley; they were both killed while approaching a shot charged with dynamite and powder, which held fire, at the face of 6th south entry. December 23rd, mine in good condition; new fan installed at bank mouth and is giving good satisfaction.

Hocking Valley Clay Mine.

Located at Nelsonville, O. Operated by the Hocking Valley Fire Clay Co., Nelsonville, O. Jos. Spencer, same place, is in charge. Drift opening, No. 5 seam, 8 feet thick; natural ventilation; 8 miners and 2 day men employed. New opening, with very little development. July 15th, found in good condition.

VISITED IN HOCKING COUNTY—(No. 2 District).**Jobs No. 2.**

Operated by the Sunday Creek Company, Columbus, O. April 9th to April 25th, and October 12th and 13th, was spent assisting with mine fire; a full report will no doubt be given by Mr. Kennedy, in whose district the mine is situated.

FOURTH DISTRICT

W. C. WIPER.

COMPOSED OF THE COUNTIES OF PERRY, MUSKINGUM AND MORGAN.

(Succeeded by Isaac Hill, Zanesville, O., July 1, 1903.)

Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio:

Dear Sir:—I herewith submit to you my second report of the mines in the Fourth Mining District composed of the counties of Morgan, Perry and Muskingum.

This report covers a short period, from January 1, 1909, to June 30, 1909, at which time my term of office expired.

The condition of the coal trade has been exceptionally poor throughout the district during the time covered by this report, and some of the mines in the low coal veins have been suspended until conditions in the coal trade would warrant their resumption.

Ninety-three visits were made to the mines, seven sets of scales tested of which six were found correct and one set out of line and not weighing correctly, and four second openings made.

With but few exceptions the mines in this district were found in fair condition; some of them were frequently found in poor condition, necessitating the issuing of orders to have them placed in a sanitary condition.

I regret to report one fatal accident, which occurred at Johnson's No. 9 mine, New Straitsville, Ohio. Geo. M. Johnson was killed by the tippie giving way and crushing him under fallen timbers and mine cars.

During the time of my connection with the State Mining Department, I have endeavored to perform the duties of the office in an honorable manner, and to enforce the mining laws with consideration and justice to all concerned.

I hereby tender my thanks to the miners and operators of this district for their generous support given me in my official capacity, and you for your suggestions and advice, and wish for yourself and assistants a successful administration of the affairs of the Mining Department.

Very respectfully submitted,

W. C. WIPER,

Malta, Ohio, June 30, 1909.

Inspector Fourth Mining District.

MORGAN COUNTY

Rose.

Located near Tropic Sta., on the Z. & W. R. R., and operated by the Carding Coal Co., Columbus, Ohio. Geo. Carding, Rose Farm, O., superintendent; Geo. Lamb, Jr., same place, mine boss. Drift, No. 6 seam, about 4 feet thick. Machine mining and fan ventilation. Motor haulage. Employs 85 loaders, 10 machine men and 38 day men. Visited March 4th; found in fair condition, with the exception of the 1st main entry, where the ventilation was not good. Requested check placed between 3rd and 4th room, in order to conduct the air to the face of the rooms.

Tropic.

Located near Tropic Sta., on the Z. & W. R. R., and operated by the Tropic Mining Co., Toledo, O. Jas. Fleming, Rose Farm, O., superintendent, and Walter Sneddin, same place, is mine boss. Slope 900 feet long to the No. 6 seam, about 4 feet thick. Machine mining; fan ventilation; motor haulage, and employs 178 loaders, 32 machine men and 57 day hands. Visited February 17th and 18th. Found air conditions good. Requested bug dust loaded out and breakthroughs kept clean. Visited June 2nd and 3rd, and found in fair condition.

MUSKINGUM COUNTY.

Granger.

Located near Buckeye Sta., on the O. L. K. Div. of the B. & O. R. R., and operated by the Victoria Coal Co., Cleveland, O. Jos. Baker, Zanesville, O., superintendent; Chas. O. Harris, South Zanesville, mine boss. Drift, No. 6 seam of coal about 3 feet 6 inches thick. Machine mining; fan ventilation; motor haulage and employs 55 loaders, 8 machine men and 15 day hands. Visited January 22nd. Found former requests complied with in regard to trap doors, except where some breakthroughs had been neglected. Requested breakthroughs made regular and kept clean. Visited April 9th; conditions fair. Requested machine wires placed on suitable insulators.

Elk.

Located near Roseville, O., on the C. & M. V. R. R., and operated by the Elk Coal Co., Columbus, O. J. S. Burns, Roseville, O., superintendent and mine boss. Drift, No. 6 seam, 4 feet thick. Motor haulage; machine mining; fan ventilation, and employs 59 loaders, 12 machine men, 21 day hands. Visited January 7th, March 1st, April 6th and April 19th, on complaint of the miners that the ventilation was not in good condition. Requested new opening made at once, and new fan placed direct at inlet. Visited June 21st. New 11-foot fan was in operation at new opening, and air conditions good throughout the mine.

Peacock No. 38.

Located at Cannelville, O., on the Z. & W. R. R. Operated by the Maynard Coal Co., Columbus, O. Elmer Bratton, Cannelville, O., superintendent and mine

boss. Drift, No. 6 seam, which is about 3 feet 8 inches thick. Coal is mined by solid shooting. Furnace ventilation, and employs 80 miners, two shot firers and 19 day men. Visited March 16th. Found in fair condition. Stopped room No. 11 on 8th west entry on account of being ahead of the air. Requested check placed between 7th and 8th rooms on the 7th west entry.

Ables.

Located near Buckeye Sta., on the Cannelville branch of the Z. & W. R. R., and operated by the Muskingum Coal & Ry. Co., Zanesville, O. L. D. Ables, Zanesville, O., superintendent, and Jacob Berkermer, Philo, O., mine boss. Drift, No. 6 seam, about 3 feet 6 inches thick. Machine mining; fan ventilation; motor haulage. Employs 38 loaders, 10 machine men and 15 day men. Visited January 8th, and found in an unfavorable condition, as the breakthrough law was not being complied with.

Pan-American.

Located at Cannelville, O., on the Z. & W. R. R., and operated by the Pan-American Coal Co., Newark, O. Allen Neal, Cannelville, O., superintendent and mine boss. Slope opening, 500 feet long to the No. 6 seam, 3 feet 8 inches thick. Coal is mined by solid shooting. Fan ventilation; rope haulage, and employs 88 loaders, 2 shot firers and 22 day hands. Visited January 21st, April 21st; found in fairly good condition, with the exception of the entries which were very dry and dusty, and requested same removed and sprinkled, and trap doors used instead of curtains.

Walnut Hill.

Located at Cannelville, O., on the Z. & W. R. R., and operated by the Walnut Hill Coal Co., Detroit, Mich. W. H. Blaney, Cannelville, O., is superintendent, and Chas. Anderson, same place, is mine boss. Drift, No. 6 seam of coal which is about 3 feet 8 inches thick. Machine and pick mining; fan ventilation and motor haulage, and employs 19 miners, 33 loaders, 6 machine runners and 23 day hands. Visited February 3rd. Found in poor condition. Main north entries 3d and 4th left, and 5th and 6th right stopped and men taken out on account of deficient air. Visited again on April 6th and found little improvement. Requested air shaft sunk as soon as possible and mining machines stopped until shields were supplied according to the mining law.

Werner.

Located near Zanesville, O., on the Marietta wagon road, and operated by W. A. Werner, Zanesville, O. Elmer Booth, Zanesville, O., superintendent and mine boss. Drift opening, No. 6 seam of coal, about 3 feet thick. Pick mining; furnace ventilation and rope haulage, employing 24 miners and 4 day men. Visited March 12th and May 12th. Found in poor condition. Requested more care taken in regard to brattices and in firing the furnace. Also requested second opening made available.

Lehigh Clay.

Located near Roseville, O., on the C. & M. V. R. R., and operated by the Hydraulic Press Brick Co., Cleveland, O. F. W. Clark, Roseville, O., superintendent, R. F. Wallace, Roseville, O., mine boss. Drift opening to the No. 5 and 6 seam of clay, about 7 feet thick; employing 10 miners, 1 day hand. Visited May 5th; found in fair condition.

Brooklyn.

Located one mile east of Roseville on the Cannelville wagon road, and is operated by the Devonshire Brick & Ceramic Co., Columbus, O. W. A. Shoemaker, Roseville, O., superintendent. Drift opening to the No. 6 seam of coal about 4 feet thick. Pick mining, furnace ventilation. Employs 7 miners and 1 day hand. Visited June 16th, and found in fair condition, but without a second opening, and requested same to be made.

PERRY COUNTY.**Hocking Valley Central No. 3.**

Located near New Straitsville, O., on the Hocking Valley R. R., and operated by the C. & H. C. & I. Co., Columbus, O. Fred Wymiller, New Straitsville, O., superintendent, and Jno. Aucher, same place, mine boss. Drift, No. 6 seam, about 7 feet thick. Pick and machine mining. Fan ventilation. Motor haulage. Employs 5 miners, 258 loaders, 20 machine runners and 64 day hands. Visited March 9th and May 18th, and found in fair condition.

No. 3 (B. & O. Central).

Located on the Rock Run branch of the B. & O. R. R., and operated by the C. & H. C. & I. Co., Columbus, O. Fred Wymiller, New Straitsville, O., superintendent; Robert Nealson, same place, mine boss. Drift openings to the No. 6 seam, about 7 feet thick. Pick and machine mining, and employs 40 miners, 65 loaders, 43 day hands. Work consists in the main of pillar and crop coal, and is nearly exhausted. Visited January 25th and 26th. Found openings in fair condition. Again visited on March 8th, to investigate accident of Jas. Johnson, who was injured by falling into a fan on the morning of February 24th. The fan had been moved the day before to this opening, and he was not aware that it was there.

Chapman No. 1 & No. 2 (No. 1).

Situated one mile west of Moxahala, O., on a branch of the T. & O. C. R. R., and operated by the Chapman Mining Co., Moxahala, O. B. F. Chapman, Moxahala, O., superintendent, and Robert Robb, same place, is mine boss. No. 1 is a slope and No. 2 is a drift to the No. 6 seam of coal, which is 3 feet 6 inches thick. Machine mining. Fan ventilation. Motor haulage. Employs 80 loaders, 16 machine runners, 40 day hands. Visited March 3rd, all work being confined to entry work. No. 1 opening in fair condition. No. 2 opening same, except main south entries, which were driven beyond the breakthrough limit. Requested brattice carried up one side of the entry until breakthrough was made. Again visited on April 8th. Both openings in fair condition.

Chapman No. 3 & No. 4 (No. 2).

Located one and a half miles west of Moxahala, O., on a branch of the T. & O. C. R. R. Operated by the Chapman Mining Co., Moxahala, O. B. F. Chapman, Moxahala, superintendent, and C. W. Holmes, same place, mine boss. Slope opening; No. 6 seam of coal about 3 feet 6 inches thick. Machine mining. Fan

ventilation, and employs in both openings, 32 loaders, 6 machine runners, 20 day hands. Visited both openings February 10th and May 6th, and found in fair condition.

Davis Bros.

Located near Shawnee, O., on the Z. & W. R. R., and operated by the Davis Bros., Shawnee, O. Thos. L. Davis, Shawnee, O., superintendent and mine boss. Drift opening, No. 6 seam of coal, 4 feet 6 inches thick. Machine mining. Fan ventilation. Motor haulage. Employs 37 loaders, 6 machine runners, 10 day hands. Visited February 25th, for the purpose of testing a set of Hopper scales, which were found weighing correctly. Visited again May 20th. Found in poor condition on account of breakthrough at head of No. 3 and 4 east entries having fallen in, retarding the ventilation. Ordered the same cleaned out and shields changed on the mining machines, as they were not shielded to properly guard the chain.

O. M. & M. Co. (Clay).

Located near Shawnee, O., on the Z. & W. R. R., and operated by the Ohio Mining & Manufacturing Co., Shawnee, O. F. W. Bryson, Shawnee, O., superintendent; Ed. Davis, same place, mine boss. Shaft openings to the No. 6 seam of clay, which is about 7 feet thick. Fan ventilation. Employs 17 miners, 4 day men. Visited March 11th. Found ventilation poor due to poor bratticing. Requested hoods put on cages and speaking tubes placed in the shaft.

No. 37.

Located near New Straitsville, O., on the Hocking Valley R. R., and operated by the Essex Coal Co., New Straitsville, O. H. H. Essex, superintendent and mine boss. Drift opening to the No. 6 seam of coal, which is about 7 feet thick. Machine mining. Employs 5 loaders, 2 machine men and 3 day hands. Work consists mainly of pillar and crop coal. Inspected March 10th. Found conditions satisfactory.

Hazelton.

Located near Shawnee, O., on the Z. & W. and B. & O. R. R., and operated by Geo. Gibbs, New Straitsville, O., who is superintendent and mine boss. Drift opening to the No. 6 seam, which is about 7 feet thick. Machine mining. Fan ventilation, and employs 26 loaders, 4 machine runners and 5 day men. Visited February 23rd. Found air conditions fair, with the exception of the 2nd west cut-off, which was stopped on account of being ahead of the air. Requested all wires going through brattices or trap-doors insulated from the wood and an independent wire for the fan.

Bear Run.

Located three miles east of New Lexington, O., on the C. & M. V. R. R., and operated by the W. A. Gosline Co., Toledo, O. E. W. Lewis, New Lexington, O., superintendent; Chas Priest, same place, mine boss. Shaft opening to the No. 6 seam of coal about 4 feet thick. Machine mining. Fan ventilation. Motor haulage. Employs 103 loaders, 14 machine runners, 28 day hands. Visited March 17th. Found in fair condition. Seven mining machines stopped until the law complied with.

Peerless.

Located at Saltillo, O., on the Z. & W. R. R. Operated by the Hamilton Wallace Coal Co., Saltillo, O. Wm. Wallace, Saltillo, O., superintendent, and Edw. Moore, same place, mine boss. Drift openings to the No. 6 seam of coal, about 3 feet 8 inches thick. Machine mining. Motor haulage. No. 2 opening has fan ventilation; No. 3, furnace. Employs 27 loaders, 6 machine runners, 10 day men. Visited January 18th, January 20th. Tested a set of Hopper scales. Found them out of line and not weighing correctly. Visited again on April 14th. Found openings in fair condition, but without a second opening. Requested them made at once.

Iron Clay Brick Clay.

Located on Rock Run branch of the B. & O. R. R. Operated by the Iron Clay Brick Co., Columbus, O. Frank A. Grimes, Shawnee, O., superintendent, and D. R. Jones, same place, mine boss. Drift openings to the No. 5 seam of clay, which is about 7 feet thick. Employs 8 miners, 4 day men. Visited February 26th and May 21st. Found air conditions very poor. Requested breakthroughs made regular and second opening made available. Visited June 24th. Tested a set of Fairbanks platform scales and found them weighing correctly.

Iron Clay Brick Coal.

Located on the Rock Run branch of the B. & O. R. R. Operated by the Iron Clay Brick Co., Columbus, O. Same management as the clay mine. Drift opening to the No. 6 seam of coal, which is about 7 feet thick. Pick mining. Natural ventilation. Employs 11 miners and 1 day hand. Visited February 26th and May 21st. Found air conditions very bad. Requested trap-door placed between No. 2 and No. 3 rooms on the 2nd east entry, and brick stoppings erected between Upson old works and this mine. A new opening has been made close to the face of the workings which will improve conditions.

No. 9 (Johnsons).

Located at New Straitsville, O., on the H. V. R. R., and operated by Richard Johnson & Sons, New Straitsville, O. Drift opening to the No. 6 seam of coal, which is about 7 feet thick. Pick mining, employing 3 miners and 1 day hand. Visited April 30th, to investigate the death of Geo. M. Johnson, who was killed by the tippie giving way and dropping him 40 feet below, and crushing him under fallen timbers and mine cars.

Jones No. 15.

Located at New Straitsville, O., on the H. V. R. R., and operated by Jones Coal Co., New Straitsville, O. Evan E. Jones, New Straitsville, superintendent and mine boss. Drift opening to the No. 6 seam of coal, which is about 7 feet thick. Machine mining. Natural ventilation. Employs 48 loaders, 4 machine men and 10 day hands. Visited May 19th. Found air conditions very poor. Requested some bratticing done on the east entries. Work is mainly pillar and ciron coal

XX No. 3.

Located at Shawnee, O., on the Z. & W. and B. & O. R. R. Operated by Jenkins & Redfern, Shawnee, O. D. W. James, mine boss, and D. C. Jenkins, Shawnee, O., superintendent. Drift opening, No. 6 seam of coal, about 7 feet thick. Employing 30 miners, 5 day men. Visited February 8th. Found the mine almost exhausted, the work being confined to main entry pillar, employing 15 miners on a shift in order to share the work with the men.

New Crescent.

Located one mile east of Roseville, O., on a branch of the C. & M. V. R. R. Operated by the Kennon Coal & Mining Co., Cleveland, O. Thos. Evans, Roseville, O., superintendent and mine boss. Drift opening to the No. 6 seam of coal, which is about 4 feet thick. Machine mining. Fan ventilation. Motor haulage. Employs 21 loaders, 6 machine runners, 10 day men. Visited January 5th, March 19th. Found in fair condition. Machines stopped until shield law was complied with. Visited May 27th. Found idle, and no inspection made.

Captain No. 2.

Located at San Toy, O., on the San Toy branch of the B. & O. R. R. Operated by the New England Coal Co., Columbus, O. Wm. Wheeler, San Toy, O., superintendent and mine boss. Shaft opening 214 feet deep to the No. 6 seam of coal, which is about 4 feet thick. Machine mining. Fan ventilation. Motor haulage. Employs 10 loaders, 2 machine runners and 7 day men. Visited April 7th. Mine had just resumed work, having been suspended for about a year for the purpose of getting out fuel to supply the boilers. Mine was not examined in the mornings according to law. Requested that this be done in the future and manway cleaned out and water taken off the road leading to the air-shaft.

Greeley No. 1, 2, 3 & 4.

Located one mile east of McCuneville, O., on the B. & O. R. R., and operated by the Peabody Coal Co., Chicago, Ill. H. M. Young, Shawnee, O., superintendent, and Lon Tague and Edw. Moroney, same place, mine boss. Drift openings to the No. 6 seam of coal, about 4 feet thick. Machine mining. Fan ventilation, and motor haulage. All openings employ 154 loaders, 20 machine runners, 59 day men. Visited No. 1 and No. 2 openings March 26th. Found in fair condition. Requested traveling-way be made around the motor switch in No. 1 opening. Visited No. 3 and 4 openings January 27th and April 27th. Found in fair condition, with second opening completed and in good condition.

Simons No 5.

Located near Redfield, O., on a branch of the Z. & W. R. R., and operated by A. C. Simons & Co., Redfield, O. A. C. Simons, Redfield, O., superintendent and mine boss. Drift opening to the No. 5 seam of coal, about 3 feet 6 inches thick. Machine mining. Fan ventilation and motor haulage. Employing 30 loaders, 6 machine runners and 9 day hands. Visited January 6th on complaint of miners in regard to a part of the workings that were approaching some old works which were filled up with water, but owing to the fallen-in condition.

It was impossible to determine the amount. Requested the superintendent to have holes drilled to ascertain whether the water was roofed or not. Mine has been suspended for three months.

Chestnut Ridge.

Located near Redfield, O., on the Redfield branch of the Z. & W. R. R., and operated by A. C. Simons & Co., Redfield, O. A. C. Simons is superintendent and mine boss. Drift opening to the No. 5 seam of coal, which is about 3 feet 6 inches thick. Pick mining. Natural ventilation. Employs 3 miners and 1 day hand. Visited March 23rd. Work consists of main entry pillar and is nearly exhausted.

Coyle, or Simons.

Located near Redfield, O., on a branch of the Z. & W. R. R., and operated by A. C. Simons, Redfield, O., who is superintendent and mine boss. Drift opening to No. 5 seam of coal, which is about 3 feet 6 inches thick. Pick mining. Furnace ventilation. Employs 14 miners and 4 day men. Visited March 23rd. Mine in fairly good condition. Requested check doors placed between No. 1 and 2 rooms on No. 1 entry and ladder placed in air shaft.

Impervious Brick.

Located near New Straitsville, O., on the H. V. R. R., and operated by the Straitsville Impervious Brick Co., New Straitsville, O. J. D. Martin, New Straitsville, O., superintendent, and Frank Francis, mine boss. Shaft opening to the No. 5 seam of clay about 7 feet thick. Fan ventilation. Employs 7 miners, 2 drillers and 1 day hand. Visited March 10th, May 17th, and found in fair condition.

Rend No. 1 & No. 2.

Located at Crooksville, Ohio, on the C. & M. V. R. R. Operated by the Standard Hocking Coal Co., Chicago, Ill. N. B. Snell, Crooksville, Ohio, superintendent, and Jos. Murphy, mine boss. Drift openings, to the No. 6 seam of coal, which is about 4 feet thick. Machine mining, fan ventilation, motor haulage, and employs 55 loaders, 10 machine men and 10 day men. Visited February 15th, tested a set of Howe Hopper scales and found correct.

Shawnee Flash Brick.

Located at Shawnee, Ohio, on the Z. & W. R. R., and operated by the Shawnee Flash Brick Co., Columbus, Ohio. E. M. Starner, Shawnee, Ohio, superintendent, and D. T. Harris, Shawnee, Ohio, mine boss. Shaft opening to the No. 5 seam of clay, about 7 feet thick; fan ventilation and employs 7 miners, 1 day hand. Visited February 23rd, March 24th and June 23rd. Found in fair condition. Requested new opening made and hoisting signal and speaking tube provided. Tested a set of platform scales and found them weighing correctly.

No. 9 East and West Side.

Located at Carrington, Ohio, on the Z. & W. R. R., and operated by the Sunday Creek Co., Columbus, Ohio. Jno. Wile, Carrington, Ohio, superintendent, and Ed Roberts, mine boss. East side is a slope 200 feet long to the No.

6 seam of coal, about 7 feet thick, and is nearly exhausted. West side is a drift to the same seam of coal. Machine mining, fan ventilation, motor haulage and employs in both openings 124 loaders, 16 machine runners, and 56 day men. Visited March 25th, June 29th, and found in fair condition.

No. 268.

Located near Rendville, Ohio, on the T. & O. C. R. R., and operated by the Sunday Creek Co., Columbus, Ohio. Andrew Wilson, Corn'ng, Ohio, superintendent, and David Mason, same place, mine boss. Slope opening to the No. 6 seam, about 8 feet thick; machine mining, fan ventilation, motor haulage, and employs 230 loaders, 18 machine runners, and 68 day men. Visited March 2nd, May 5th. Mine in fair condition. Requested shields changed on mining machines, in order to cover the chain.

No. 301 (Congo).

Located at Congo, Ohio, on the Z. & W. R. R., and operated by the Sunday Creek Co., Columbus, O. Harry Kelley, Congo, mine superintendent. Jno. Murray, same place, mine boss. Shaft opening to the No. 6 seam, about 12 feet thick, pick and machine mining, fan ventilation, motor haulage and employs 50 miners, 266 loaders, 20 machine runners, and 77 day hands. Visited February 9th, May 4th. Found mine in fair condition on both visits. Requested bug dust loaded out and not used as ballast for tracks.

No. 302 (Congo).

Located at Congo, Ohio, on the Z. & W. R. R., and operated by the same company as the No. 301 mine. Harry Kelley, Congo, Ohio, superintendent, and Andrew Braidwood, same place, mine boss. Shaft opening to the No. 6 seam of coal, about 12 feet thick, pick and machine mining, fan ventilation, and employs 12 miners, 237 loaders, 16 machine runners, and 71 day hands. Visited February 11th, April 29th, and found in fair condition. Found three mining machines with shields on one side only. Requested same stopped until shielded on both sides.

No. 321 (Pedlow, or Lady Grange).

Located at Misco, Ohio, on the Z. & W. R. R., and operated by the Sunday Creek Co., Columbus, Ohio. Herman Theison, Misco, Ohio, superintendent and mine boss. Shaft opening 39 feet deep, to the No. 6 seam, about 4 feet thick; machine mining, fan ventilation, motor haulage, and employs 120 loaders, 16 machine runners, and 55 day hands. Visited January 29th and May 11th and found in fair condition. Air conditions are very much improved since brick stoppings have been erected between main west entries.

Midway No. 3.

Located at Redfield, Ohio, on the Z. & W. R. R. Operated by the Twentieth Century Coal Co., Columbus, Ohio. Jno. Davies, Zanesville, Ohio, superintendent and mine boss. Drift opening, to the No. 5 seam of coal, which is about 3 feet 6 inches thick; pick mining, furnace ventilation. Visited March 22nd, and mine suspended.

Union No. 3.

Located near Crooksville, Ohio, on the C. & M. V. R. R., and operated by the Union Mining Co., Columbus, Ohio. Geo. Carding, Rosefarm, Ohio, superintendent, and Jas. Napier, Crooksville, Ohio, mine boss. Drift opening, No. 6 seam of coal, about 3 feet 8 inches thick; machine mining, fan ventilation, and employs 25 loaders, 4 machine runners, and 15 day hands. Visited May 24th, work having just been resumed after a suspension of about four months, and conditions were not very good, on account of a squeeze on the air courses. Preparations were being made to drive new air course to the new shaft.

Dixie.

Located at Dixie, Ohio, on the B. & O. R. R., and operated by the Upson Coal Mining Co., Newark, Ohio. Walter Upson, Newark, Ohio, superintendent, and Jno. Bell, Dixie, Ohio, mine boss. Drift opening, to the No. 6 seam of coal, about 3 feet 8 inches thick. Machine mining, fan ventilation, and gathering motors, on the third rail system. Employs 68 loaders, 10 machine runners, and 18 day men. Visited January 28th, April 28th. Found in fair condition. Requested that third rail be covered with boards.

Wilbren.

Located at Wilbren, Ohio, on the C. & M. V. R. R., and operated by the Wilbren Coal Co., New Lexington, Ohio. W. K. Redfern, Shawnee, Ohio, superintendent, and Chas. Priest, who has just taken charge, is mine boss. Drift opening, No. 6 seam, about 4 feet thick. Machine mining, fan ventilation, motor haulage, and employs 23 loaders, 6 machine runners, and 16 day hands. Visited March 18th, April 13th. Tested a set of Hopper scales, and found correct. Again visited June 4th, found in fair condition. Requested new opening made and fan placed direct at inlet.

Lilly.

Located one and a half miles east of New Lexington, Ohio, on the C. & M. V. R. R., and operated by the Lilly Hocking Coal Co., Columbus, Ohio. J. E. Dorsey was in charge when visited. Drift opening, No. 5 seam, about 3 feet 6 inches thick. Pick mining, furnace ventilation. Mine is being reopened and only 4 day hands employed.

Keystone No. 1.

Located at Crooksville, Ohio, on the C. & M. V. R. R., and operated by the Zanesville Coal Co., Crooksville, Ohio. Thos. Opie, Crooksville, Ohio, superintendent, and Geo. McClellan, same place, mine boss. Drift opening, No. 6 seam of coal, about 4 feet thick. Machine mining, fan ventilation, motor haulage, and employs 127 loaders, 16 machine runners, and 36 day hands. Visited January 19th, March 30th, and June 17th. Found in fair condition, with the exception of machine wire, which was in bad condition. Requested system of wiring commenced continued.

Keystone No. 2.

Located at McLuney, Ohio, on the C. & M. V. R. R., and operated by the Zanesville Coal Co., Crooksville, Ohio. Thos. Opie, Crooksville, Ohio, superin-

tendent, and Thos. Ward, McLuney, Ohio, mine boss. Drift opening, No. 6 seam, about 4 feet thick. Motor haulage and machine mining; fan ventilation, and employs 24 loaders, 6 machine runners, and 7 day hands. Work has been divided between 75 miners and is confined to entry work. Visited March 29th; found in fair condition. Mine was suspended shortly after this visit.

Keystone No. 3.

Located near Crooksville, Ohio, on the C. & M. V. R. R., and operated by the Zanesville Coal Co., Crooksville, Ohio. Cal Mullen, Crooksville, Ohio, mine boss. Drift, No. 6 seam of coal, about 4 feet thick. Pick mining, fan ventilation; employs 23 miners and 3 day hands. Visited March 15, May 26th. Found in fair condition on both visits. Thos. Opie, Crooksville, Ohio, mine boss.

FOURTH DISTRICT

ISAAC HILL.

COMPOSED OF THE COUNTIES OF PERRY, MUSKINGUM AND MORGAN.

Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio:

Dear Sir:—In compliance with custom of the Mining Department, I herewith submit to you my first report of the Fourth Mining District, composed of the counties of Muskingum, Perry and Morgan, covering the period of my appointment, from July 1st, 1909, to December 31st, 1909.

One hundred and forty-seven (147) visits were made, and 6 sets of scales tested. Found 4 sets weighing correctly and 2 incorrectly. Eleven (11) permanent improvements were made. Seven mines remained suspended throughout the year.

In discharging my duties as district mine inspector I have visited the mines in my district as often as the duties of my office would permit, and they were generally found in fair condition.

The coal trade has been fair. The mines in the major part of the district have operated from three to five days a week, shortage of cars and lack of water being the chief drawbacks.

I regret to report four fatal accidents, and one natural death. Chas. Young was killed by fall of roof July 20th, at Upson's mine, at Dixie, while riding on motor trip; John Miles was killed by fall of slate September 7th, in F. Fisher's mine; Ernest Inman, at Greeley No. 1, October 23rd, by falling off a loaded car of coal and car running on him; Fred Smith, October 26th, killed at Granger mine, by empty cars coming down incline and knocking him off tippie; Marshall Marcum died of heart trouble, in Sunday Creek No. 268, December 1st.

In conclusion, I desire to extend my thanks to you and all the members of the Mining Department for the advice rendered me in discharge of my duties.

Respectfully submitted,

ISAAC HILL, Zanesville, Ohio.

Inspector District No. 4.

December 31, 1909.

MUSKINGUM COUNTY.

Walnut Hill.

Located at Cannelville, Ohio, on the Z. & W. R. R. Operated by the Walnut Hill Coal Co., Detroit, Mich. W. H. Blaney, Cannelville, Ohio, superintendent. Chas. Anderson, same place, mine boss. Drift, No. 6 seam of coal, about 3 feet 8 inches thick. Machine and pick mining. Fan ventilation; employs 24 pick miners, 56 loaders, 6 machine runners and 17 day hands. Visited July 6th. Found ventilation poor. Ordered two trap doors in place of curtains; stoppings repaired, and shaft for outlet completed as soon as conditions would permit. Visited July 13th. Found little change. Ordered conditions improved at once. Visited July 16th. Found conditions fair. November 19th, found mine in fair condition; shaft completed, except steps in shaft.

Abels.

Located one mile south of Buckeye, on a branch of the Cannelville division of Z. & W. R. R. Operated by the Muskingum Coal & Ry. Co., Zanesville, Ohio. C. I. Butts, of South Zanesville, superintendent and mine boss. Drift opening, No. 6 seam, 3 feet 6 inches thick. Fan ventilation, machine mining; employs 46 loaders, 8 machine runners, 13 day hands. July 7th, found in fair condition. October 19th, found 6 men working in second opening, and ventilation poor. Requested mine boss to improve conditions in that part of mine. November 26th, found mine boss had taken men out of that part of mine.

Elk.

Located near Roseville, on the C. & M. V. R. R. Operated by the Elk Coal Co., Columbus, Ohio. S. E. Raney, Columbus, Ohio, superintendent. J. S. Burnis, Roseville, Ohio, mine boss. Drift opening, to No. 6 seam. Machine mining; employs 58 loaders, 10 machine runners and 22 day hands. Fan ventilation. Visited July 9th; found in fair condition. October 22, in fair condition, with exception of no headlight on motor. Requested one put on.

Porter Bros.

Located one mile southeast of Mt. Sterling, Ohio, on national pike. Operated by Porter Bros., Hopewell, Ohio, Route No. 2. G. L. Porter, Hopewell, Ohio, superintendent and mine boss. Drift, No. 7 seam, 6 feet thick. Pick mining; employs 8 miners, 3 day hands. Visited August 30th. Natural ventilation; found ventilation deficient. Requested furnace built at once, which Mr. Porter agreed to do.

Granger.

Located near Buckeye Station, on O. & L. K. division of B. & O. R. R. Operated by Victoria Coal Co., Cleveland, Ohio. Jos. Baker, Zanesville, Ohio, superintendent. C. L. Harris, South Zanesville, Ohio, mine boss. Drift, opening to No. 6 seam of coal, 3 feet thick. Machine mining; fan ventilation; employs 67 loaders, 8 machine runners and 20 day hands. July 12th, tested pair of hopper scales; found them weighing incorrectly; new pair was installed at once. Visited September 15th and December 27th. Found mine in fair condition on both visits.

Maynard No. 38.

Located at Cannelville, Ohio, on the Z. & W. R. R. Operated by Maynard Bros., Columbus, Ohio. Elmer Bratton, Cannelville, Ohio, superintendent. Calvin Dosier, same place, mine boss. Drift, No. 6 seam; about 3 feet 8 inches thick. Furnace ventilation. Coal mined by solid shooting. Employs 80 miners and 22 day hands, and 2 shot firers. August 3rd, found mine in fair condition; tested pair of Fairbanks hopper scales; found weighing correctly.

McGarvey's.

Located at Cannelville, Ohio, on the Z. & W. R. R. Operated by Boyd Coal Co., Cannelville, Ohio. J. A. McGarvey, Cannelville, Ohio, superintendent and mine boss. Coal is mined by solid shooting. Furnace ventilation. Employs 25 miners and 8 day hands. Visited August 4th; found mine in fair condition.

Pan-American.

Located at Cannelville, Ohio, on the Z. & W. R. R. Operated by the Pan American Coal Co., Newark, Ohio. Wayne Collier, Newark, Ohio, superintendent. Chas. Anderson, Cannelville, Ohio, mine boss. Slope, No. 6 seam, 3 feet 10 inches thick. Coal is mined by solid shooting. Fan ventilation. Employs 50 miners and 12 day hands. Visited November 18th. Mine was in fair condition, except room No. 1 on 1st east entry was 76 feet without breakthrough. Requested mine boss to take men out until breakthrough was made.

Werner's No. 1.

Located three-fourths of a mile east of Zanesville, on Marietta wagon road. Operated by W. A. Werner, Zanesville, Ohio. Elmer Booth, Baileys Mill, superintendent and mine boss. Drift, No. 6 seam, about 2½ feet thick. Pick mining; furnace ventilation; employs 18 miners and 3 day hands. Visited July 26th. Mine in fair condition.

L. Fisher's No. 2.

Located on Saltgum Hollow, on South River road. Operated and superintended by L. Fisher, Zanesville, Ohio. Wm. Ray, same place, mine boss. Drift, No. 6 seam, 3 feet thick; furnace ventilation; dog haulage. Coal is mined by solid shooting. Employs 10 miners and 1 day hand. July 28th, mine ventilation poor; requested furnace and airway cleaned out, as well as some other minor repairs.

Salt Run No. 2.

Located at Romine Station, on the O. R. & W. R. R. Owned by the Fair-oaks Coal Co., Columbus, O. A. B. Mullen, Zanesville, Ohio, superintendent and mine boss. Drift, No. 7 seam, 6 feet thick. Picks are used to mine the coal; 9 miners and 1 day man employed. Visited December 7th. Found mine in fair condition, having been suspended for about two years.

No. 16.

Located at Cannelville, Ohio, on Z. & W. R. R. Operated by the Kramer Coal Co., New Straitsville, Ohio. Jas. Powers, Cannelville, Ohio, superintendent.

nt mine boss. Drift, No. 7 seam, about 4 feet thick. Pick mining; shooting. Furnace ventilation; employs 12 miners and 5 day hands. October 11th, fall in the air course had choked the air, and a new airway was being made.

Stone, or Blue Rock.

Located near Stone Station, on O. & L. K. division of the B. & O. R. R. operated by Blue Rock Coal Co., Gaysport, Ohio. J. Souders, Gaysport superintendent and mine boss. Drift, No. 7 seam, 4 feet thick. Furnace ventilation. Coal mined by solid shooting; employs 6 miners and 4 day hands. Visited August 13th. Found mine in fair condition, with the exception of iron and steel tapping tools, which were still in use. Requested the superintendent to have them removed from the mine before it was operated.

Wellers Nos. 1 & 2 at 1.

Located one-half mile south of South Zanesville, Ohio. Operated by W. H. Weller, South Zanesville, who is superintendent. J. C. Wagoner, same place, mine boss. Drift, No. 6 seam, about 3 feet 4 inches thick. Employs 24 miners and 1 day man. Visited July 27th. Found ventilation very poor. Requested furnace put in in place of grate and stack battled. Visited September 27th. Found ventilation in main No. 1 opening very poor. Requested mine boss to remove men at once. Visited November 2nd. Found in fair condition. Orders given on previous visits complied with.

F. Fisher.

Located two miles south of Zanesville, on South River wagon road. Operated and superintended by F. Fisher, Zanesville, Ohio. Chas. Anderson, Zanesville, Ohio, mine boss. Drift opening, No. 6 seam, 3 feet thick. Pick mining; employs 12 miners and 1 day man. Visited July 27th. Found ventilation very poor. Requested furnace built and check doors erected at neck of rooms to force air to face. September 8th, investigated death of John Miles, who was killed by a fall of slate in room No. 1 on 1st south entry. Mine in fair condition.

COAL MINES SUSPENDED DURING YEAR.

No. 37, 1 and 2.

Located at Cannelville, Ohio. Owned by Fobes-Tompkins Coal Co., Columbus, Ohio.

Dewey.

Located near Seelover Station, on O. & L. K. division of B. & O. R. R. Owned by Duncan Run Coal Co., Detroit, Mich.

Kings.

Located near Ellis Station, on the C. & M. V. R. R. Owned by R. J. King, Zanesville, Ohio. Visited August 31st. Found idle.

SMALL MINES EMPLOYING LESS THAN TEN MEN.

These mines are all No. 6 seam of coal, about 3 feet in thickness, unless otherwise designated.

Emery.

Located on Coopermill wagon road, two miles southwest of Zanesville, Ohio. A. Emery, superintendent and mine boss. Drift opening. Visited November 1st; 7 miners employed. Natural ventilation, wagon transportation, dog haulage.

White.

Located on East Pike, two miles west of Zanesville. Operated by W. White, Zanesville, Ohio. Five miners employed. Natural ventilation, wagon transportation, dog haulage. Visited November 1st.

Burgess.

Located on Coopermill wagon road, two miles southwest of Zanesville, Ohio. Operated by William Burgess, Zanesville, Ohio. Four miners employed. Natural ventilation, wagon transportation, dog haulage. Visited November 1st.

Thomas.

Located two miles southeast of South Zanesville, Ohio, near Granger mine. Operated by W. H. Thomas, South Zanesville, Ohio. Employed 3 miners. Wagon transportation, natural ventilation. Visited November 2nd.

Lehew.

Located on Mill Run road, two miles northeast of Zanesville, Ohio. Operated by Geo. M. Lehew, Zanesville, Ohio. Drift opening. Visited November 4th; six miners employed. Fire basket ventilation, wagon transportation, dog haulage.

F. Harper.

Located on Millrun wagon road, two miles northeast of Zanesville. Operated by F. Harper, Zanesville, Ohio. Visited November 4th; 2 miners employed; wagon transportation; dog haulage; natural ventilation.

Mitchell.

Located one mile east of Zanesville, Ohio. Operated and managed by W. Mitchell, Zanesville, O. Drift, No. 6 seam, 3 feet thick. Natural ventilation; employs 3 miners. Visited December 6th.

Lutz.

Located on Mill Run wagon road, two miles east of Zanesville, O. Operated by Lutz Brothers, Zanesville, Ohio. John Lutz, same place, superintendent and mine boss. Four miners and 1 day hand were employed. Furnace ventilation; wagon transportation; dog haulage. Visited November 4th; conditions approved.

Greiner No. 1.

Located about two miles northeast of Zanesville, Ohio. Operated by H. L. Greiner & Sons, Zanesville, Ohio. Drift opening to No. 5 seam of coal. Visited November 4th. Seven miners and 2 day hands employed. A new air shaft had just been sunk. Natural ventilation, mule haulage, wagon transportation; conditions approved.

Greiner No. 2.

Located two miles northeast of Zanesville. Operated by H. L. Greiner & Sons, Zanesville, Ohio. Drift opening. Visited November 4th. Two miners were employed. Wagon transportation, dog haulage.

Harper Bros.

Located on Mill Run wagon road, about two miles northeast of Zanesville, Ohio. Chas. Harper, Zanesville, Ohio, superintendent and mine boss. Drift opening. Visited November 4th. Six miners employed. Wagon transportation, dog haulage, furnace ventilation. Conditions approved.

Hauff.

Located on Saltgum Hollow, one-half mile southeast of Zanesville. Owned and operated by A. Hauff, Zanesville, Ohio. Visited November 5th. Three miners were employed. Furnace ventilation, wagon transportation, dog haulage.

Shipps.

Located on South River road, four miles south of Zanesville, Ohio. Operated by A. S. Shipps, Zanesville, Ohio. Five miners employed. Furnace ventilation, wagon transportation, dog haulage. Visited November 5th.

F. J. Paul.

Located about three and one-half miles south of Zanesville, on South River road. Operated by F. J. Paul, Zanesville, Ohio. Visited November 5th. Six miners employed. Furnace ventilation, wagon transportation, mule haulage.

P. N. Paul.

Located about three miles south of Zanesville, on South River road. Operated by P. N. Paul, Zanesville, Ohio. Employs 4 miners; wagon transportation, furnace ventilation, dog haulage. Visited November 5th.

L. Fisher No. 1.

Located in corporation of Zanesville, Ohio. Owned and operated by L. Fisher, Zanesville, Ohio. Drift opening, furnace ventilation; five miners employed; wagon transportation; dog haulage. Visited November 5th.

Shaw.

Located one mile east of Zanesville, Ohio. Operated and managed by William Shaw, Zanesville, Ohio. Drift, No. 6 seam, 3 feet thick; employs 6 miners; natural ventilation. Visited December 6th.

Wigdon.

Located in Roseville corporation. Owned and operated by Samuel Wigdon. Roseville, Ohio. Drift opening, natural ventilation. Visited November 16th. Nine miners and one day hand were employed. Wagon transportation, mule haulage.

Moody.

Located one mile southeast of Cannelville, on Deavertown wagon road. Owned and operated by Wm. Moody, Cannelville, Ohio. Drift opening to No. 7 seam of coal. Two miners employed; wagon transportation, furnace ventilation. Visited November 17th.

Pletcher.

Located one and one-half mile southeast of Cannelville, Ohio. Drift opening. Owned and operated by O. Pletcher, Cannelville, Ohio. Employed two miners; wagon transportation, natural ventilation. Visited November 17th.

Werner No. 2.

Located three-fourths of a mile east of Zanesville, Ohio. Operated by W. A. Werner, Zanesville, Ohio. Elmer Booth, Bailey's Mill, Ohio, superintendent and mine boss. Drift, to No. 6 seam, $2\frac{1}{2}$ feet thick; nine miners employed. Wagon transportation, dog haulage, basket ventilation. Visited July 26th.

Weller No. 2.

Located one mile southwest of South Zanesville. Owned by W. H. Weller, South Zanesville, Ohio. A. J. Workman, same place, superintendent and mine boss. Drift, No. 6 seam, 3 feet thick. Natural ventilation; employs 6 miners and 2 day hands. Visited September 16th; in fair condition.

C. M. Fisher.

Located one mile east of Zanesville, Ohio. Operated and managed by C. M. Fisher, Zanesville, Ohio. Drift, No. 6 seam, 3 feet thick; furnace ventilation; employs 5 miners. Visited December 6th.

CLAY MINES.**Lehigh No. 2.**

Located near Roseville, on C. & M. V. R. R., and operated by the Hydraulic Press Brick Co., Ironspot, Ohio. R. F. Wallace, Roseville, Ohio, superintendent and mine boss. Drift opening, Nos. 5 and 6 seams of clay, 8 feet thick. Employs 10 miners and 2 day hands. Visited October 6th; found ventilation poor. Ten days were given in which to install fan.

Cookson Clay.

Located near Roseville, on C. & M. V. R. R. Operated by Earl Cookson, Roseville, Ohio. Basket ventilation. Drift, No. 5 seam of clay, 5 feet thick. Employs 2 miners. Visited November 16th; mine in fair condition.

Blue Rock Oil & Gas Co.

Visited September 17th, for the purpose of seeing that the law was complied with in regard to plugging an abandoned gas well which passed through the No. 6 seam of coal.

PERRY COUNTY.**Union.**

Located near Crooksville, Ohio, on a branch of the C. & M. V. R. R. Operated by Union Coal Mining Co., Columbus, Ohio. Geo. Carding, Rose Farm, Ohio, superintendent. Jas. Napier, Crooksville, Ohio, mine boss. Drift, No. 6 seam, about 3 feet 6 inches thick; fan ventilation; machine mining; employs 25 loaders, 6 machine runners and 12 day hands. July 15th, mine in fair condition. October 12th, requested No. 14 room, on 3rd west, driven through to No. 14 room on 2nd west entry, for an air-way; also some other minor repairs.

Keystone No. 1.

Located one-half mile west of Crooksville, on C. & M. V. R. R. Operated by Zanesville Coal Co., Crooksville, Ohio. Thos. Opie, Crooksville, Ohio, superintendent. Geo. McClellan, same place, mine boss. Drift, No. 6 seam of coal, about 3 feet 6 inches thick. Fan ventilation, machine mining; employs 116 loaders, 16 machine runners, 40 day hands. August 9th, mine in fair condition. December 13th and 14th, found shaft sunk on 7th south entry for an intake, which improved the ventilation. Requested some breakthroughs cleaned out and other repairs.

Keystone No. 2, and 1 off No. 2.

Located at McLuney, Ohio, on C. & M. V. R. R. Operated by Zanesville Coal Co., Crooksville, Ohio. Thos. Opie, Crooksville, Ohio, superintendent. Thos. Ward, McLuney, Ohio, mine boss. Drift opening, No. 6 seam about 3 feet 6 inches thick. Two fans are used for ventilation. Machine mining; employs 65 loaders, 12 machine runners, 17 day hands. July 23rd, mine had been idle for three months, and only repairs being made previous to a resumption of work. October 21st, mine in fair condition, with the exception that the motor was being operated without a head light; requested one put on.

Keystone No. 3.

Located one-half mile east of Crooksville, on C. & M. V. R. R. Operated by Zanesville Coal Co., Crooksville, Ohio. Thos. Opie, superintendent, C. A. Mullen, mine boss, both of Crooksville, Ohio. Drift, No. 6 seam, 3 feet 8 inches thick. Fan ventilation, pick mining; employs 32 miners and 4 day hands. July 19th, found mine in fair condition. October 15th, mine in fair condition, except main door between 1st and 2nd west entry was found open. Requested mine boss to employ a trapper at door.

Rends No. 2.

Located near Crooksville, Ohio, on C. & M. V. R. R. Operated by the Standard Hocking Coal Co., Chicago, Ill. N. B. Snell, superintendent. Jos.

Murphy, mine boss, both of Crooksville, Ohio. Drift, No. 6 seam, 3 feet 6 inches thick. Fan ventilation, machine mining, and employs 60 loaders, 12 machine runners and 24 day hands. July 26th, mine was idle; repairing. October 8th, ventilation fair; safety holes on south motor road obstructed with slate and bone coal. Requested it taken out and other minor repairs.

Dixie.

Located at Dixie, on Shawnee division of B. & O. R. R. Operated by Upson Coal & Mining Co., Newark, Ohio. W. F. Upson, same place, superintendent. John Bell, Dixie, Ohio, mine boss. Drift, No. 6 seam, about 4 feet thick. Ventilated by 2 Sackett fans. Machine mining; motor haulage, third rail system. This is the only mine in the 4th mining district using the third rail system haulage, with apparent good results. Employs 68 loaders, 14 machine runners and 22 day hands. Visited July 21st, to investigate the death of Chas. Young, who was killed while riding on motor trip by fall of roof in main entry about 300 feet from entrance of mine. Visited September 13th; on 1st and 2nd east entries on main south opening, ventilation was deficient. Requested mine boss to remove men until conditions were improved. December 21st, found results of former visit complied with and mine in fair condition.

C & E, or Simons No. 5.

Located on branch of the Z. & W. R. R. Operated by A. C. Simons & Son, Eld, Ohio. A. C. Simons, superintendent. Oscar Hammond, Redfield, Ohio, boss. Drift opening, No. 5 seam, about 4 feet thick. Fan ventilation, machine mining, and employs 47 loaders, 10 machine runners and 13 day hands. Visited July 22nd; requested a trap door between 1st and 2nd east entries. Visited October 26th; found request of my former visit complied with and mine in fair condition, except without map of mine. Requested one within 30 days.

Davis Bros.

Located at Shawnee, Ohio, on the Z. & W. R. R. Operated by Davis Bros., Shawnee, Ohio. T. L. Davis, same place, superintendent and mine boss. Drift, No. 6 seam, about 5 feet thick. Fan ventilation, machine mining; employs 35 loaders, 6 machine runners and 12 day hands. Visited August 6th; found in fair condition. November 24th, mine in fair condition, except 1st west entry off main east entry. Ventilation was deficient. Requested mine boss to better conditions or take men out.

Jones Bros.

Located near New Straitsville, Ohio, on H. V. R. R. Operated by Jones Coal Co., New Straitsville, Ohio. Evan Jones, same place, superintendent and mine boss. Drift, No. 6 seam, about 12 feet thick. Natural ventilation, machine mining; employs 60 loaders, 4 machine runners and 10 day hands. Work is mostly pillar and close to crop lines. About 4 feet of top coal for roof is left, and in most of places by firing a shot in top or roof coal the cover will fall and leave an aperture for ventilation. Visited August 10th; found mine idle. August 26th, in fair condition, considering the mine is so nearly completed. September 28th, found ventilation deficient where six men were working; ordered mine boss to take men out until condition was improved; also requested some other minor repairs.

Greeley Nos. 1, 2, 3 and 4.

Located one mile east of McCuneville, Ohio, on Shawnee division of B. & O. R. R. Operated by Peabody Coal Co., Chicago, Ill. H. N. Young, New Lexington, Ohio, superintendent. Lon Tague, same place, mine boss at Nos. 1 and 2 openings. E. L. Morrooney, Shawnee, Ohio, mine boss at Nos. 3 and 4 openings. The coal from all four openings is handled over one hopper scale. All are drift openings. No. 6 seam about 4 feet thick; each opening employing fan ventilation. Machine mining, motor haulage, and employs 171 loaders, 20 machine runners and 50 day hands. Visited Nos. 1 and 2 August 11th; found mine in fair condition; requested door in No. 2 opening on main entry, in order to better conditions on main north entries. Visited Nos. 3 and 4 openings; mine was idle on account of squeeze in No. 4 opening, about 300 feet from entrance of mine. Visited No. 1 opening October 25th, to investigate fatal accident of Ernest Inman, who was killed while employed as a driver, by falling off of the front end of loaded car of coal and car running on him.

Central No. 3.

Located at New Straitsville, Ohio, on the H. V. R. R., and operated by the C. & H. C. & I. Co., Columbus, Ohio. Fred Weymueller, New Straitsville, Ohio, superintendent. John Achaner, same place, mine boss. Drift, No. 6 seam of coal, about 8 feet thick; fan ventilation, machine and pick mining; employs 5 miners, 247 loaders, 20 machine runners and 77 day hands. Visited August 12th; mine in fair condition; were driving 27 west entry to crop for an intake. December 22nd, mine in general was in fair condition, except room 25 on main south entry was being worked beyond the breakthrough limit; also room 23, west entry, was being worked in the same manner. Ordered mine boss to remove men until breakthroughs and some other minor repairs were made.

XX Nos. 1 and 2.

Located at Shawnee, Ohio, on Z. & W. and B. & O. R. R.'s. Operated by Shawnee Coal Mining Co., Shawnee, Ohio. D. C. Jenkins, superintendent. W. K. Redfern, mine boss, both of Shawnee, Ohio. Drifts to No. 6 seam, about 7 feet thick. Fans are used for ventilation. Machine and pick mining; employs 50 loaders, 6 pick miners, 8 machine runners and 27 day hands. Visited north side August 16th; found in fair condition. November 23rd, visited north side and found four men working on stumps and no circulation of air. Requested mine boss to take men out. Visited south side November 22nd; this side of mine is almost completed; 10 men working on main entry. Pillars in fair condition.

B. & O. No. 3.

Located on Rock Run branch of B. & O. R. R. Operated by C. & H. C. & I. Co., Columbus, Ohio. Fred Weymueller, New Straitsville, Ohio, superintendent. Robert Nealson, same place, mine boss. Drift, No. 6 seam, about 7 feet thick. Machine and pick mining; ventilated by two fans. This mine is all pillar work; employs 40 miners, 60 loaders, 8 machine runners and 43 day hands. Visited August 17th; mine in fair condition, considering the old workings with deficient air. Visited December 17th; found mine in fair condition. Work at present is confined to pillars; also cleaning and repairing, preparatory to starting some new work at head of main south entries.

Rock Run Coal.

ted on Rock Run, a branch of the B. & O. R. R. Operated by the Iron
 ck Co., Columbus, Ohio. O. F. Grimes, Shawnee, Ohio, superintendent.
 L. Davett, same place, mine boss. Drift, No. 6 seam, 7 feet thick. Natural
 wall; employs 11 miners and 3 day hands. Ventilation was deficient.
 Furnace built in air shaft within five days. Mr. Jones being one of the
 rs promised to have this done at once. Time did not permit of a regu-
 lar section of this mine, but a visit was made for the purpose of ascertaining
 if the improvement ordered was being complied with, and found furnace com-
 pleted.

Wilbren.

Located about two miles east of New Lexington, on C. & M. V. R. R. Op-
 erated by Wilbren Coal Co., New Lexington, Ohio. Frank Clark, superintend-
 ent. C. Priest, mine boss. Both of New Lexington, Ohio. Drift, No. 6 seam 4
 feet thick. Fan ventilation, machine mining; employs 24 loaders, 6 machine
 runners and 17 day hands. Visited August 19th; found idle. October 28th, in
 fair condition. A new air shaft had been completed for an intake and fan re-
 moved nearer to the workings; ventilation was good.

Sunday Creek No. 268.

Located one-half mile north of Rendville, Ohio, on T. & O. C. R. R. Operated
 by Lay Creek Co., Columbus, Ohio. D. H. Williams, Athens, Ohio, superin-
 tendent. Andw. Wilson, Corning, Ohio, mine boss. Slope, 400 feet long; No.
 seam about 12 feet thick; ventilated by two fans. Machine mining; employs
 240 loaders, 18 machine runners and 70 day hands. Visited August 23rd; mine
 in fair condition. October 20th, tested a pair of railroad track scales; found
 weighing correctly. December 1st, investigated death of Marshall Marcum, who
 died of heart trouble in No. 1 room off 4th west entry. Visited Decemehr 29th;
 found mine in fair condition.

Sunday Creek No. 301.

Located at Congo, Ohio, on Z. & W. R. R. Operated by Sunday Creek Co.,
 Columbus, Ohio. Harry Kelly, Congo, Ohio, superintendent. J. J. Murray, same
 place, mine boss. Shaft opening, 28 feet to No. 6 seam, about 13 feet thick. Fan
 ventilation; machine and pick mining; employs 48 miners, 225 loaders, 18 ma-
 chine runners and 78 day hands. Visited September 29th and 30th; mine was
 in fair condition, except some wiring, which was not in compliance with law.

Sunday Creek No. 302.

Located at Congo, on Z. & W. R. R. Operated by Sunday Creek Co., Co-
 lumbus, O. Harry Kelley, Congo, O., superintendent. A. H. Braidwood, Cor-
 ning, O., mine boss. Shaft, 20 feet, to No. 6 seam of coal, about 13 feet
 thick. Fan ventilation; machine and pick mining; employs 10 miners, 212
 loaders, 16 machine runners and 73 day hands. Visited September 30th and Oc-
 tober 1st. Mine in fair condition, and requested some minor changes in the
 wiring.

Sunday Creek No. 9 (East Side).

Located at Carrington, on Z. & W. R. R. Operated by Sunday Creek Co.,
 Columbus, Ohio. Jno. Wiles, Carrington, Ohio, superintendent. E. W. Roberts,

Hemlock, Ohio, mine boss. Drift, No. 6 seam, about 7 feet thick; fan ventilation, machine mining, and employs 22 loaders, 2 machine runners and 8 day hands. Visited October 5th; found mine in fair condition, considering the finishing stage of work. Most of work is pillar.

Sunday Creek No. 9 (West Side).

Located at Carrington, on Z. & W. R. R. Operated by Sunday Creek Co., Columbus, Ohio. Jno. Wiles, Carrington, Ohio, superintendent. E. W. Roberts, Hemlock, Ohio, mine boss. Drift opening, No. 6 seam, about 6 feet thick; fan ventilation, machine mining; employs 130 loaders, 14 machine runners and 53 day hands. Visited October 5th; found mine in fair condition. This being a new mine, all stoppings were being made of brick and cement. A large quantity of air was being wasted where the fan was located; requested it repaired, also some other minor changes.

Hazleton.

Located near Shawnee, on Z. & W. and B. & O. R. R. Operated by Geo. Gibbs, New Straitsville, Ohio, who is superintendent and mine boss. Drift, No. 6 seam, about 8 feet thick. Fan ventilation, machine mining; employs 24 loaders, 4 machine runners and 5 day hands. Visited October 14th; mine was in fair condition, except some wiring, which was not approved. Requested wires placed on rib in compliance with law. Mine had been suspended about four months.

Perry.

Located at Redfield, on Z. & W. R. R. Operated by Perry Coal Co., Somerset, Ohio. J. C. Williams, same place, superintendent and mine boss. Drift, No. 5 seam, 3 feet 6 inches thick; pick mining, furnace ventilation; employs 14 miners and 3 day hands. Visited October 18th; found ventilation fair. Mine is very wet; requested a ditch from main south passway to No. 1 room on 1st east entry for the purpose of draining off the water. Second opening was unsafe on account of falls and loose slate; requested it repaired at once.

Essex No. 37.

Located at New Straitsville, Ohio, on H. V. R. R. Operated by Essex Coal Co., New Straitsville, Ohio. H. H. Essex, superintendent. U. S. Essex, mine boss. Both of New Straitsville, Ohio. Drift, No. 6 seam, about 7 feet thick; fan ventilation, machine mining; employs 10 loaders, 4 machine runners and 3 day hands. Visited December 3rd; found mine idle. Was unable to make a complete inspection on account of fan being out of commission.

Santoy No. 1.

Located at Santoy, on Santoy division of the B. & O. R. R. Operated by the New England Coal Co., Columbus, Ohio. C. S. Wheeler, Santoy, Ohio, superintendent and mine boss. Shaft, 185 feet deep, No. 6 seam, about 4 feet thick. Fan ventilation, machine mining; employs 16 loaders, 2 machine runners and 8 day hands. Visited September 9th. Mine has been idle about two years, except a few days in September for winter fuel for mine.

Santoy No. 2.

Located one mile north of No. 1 on same railroad, and operated by same company as Santoy No. 1. C. S. Wheeler, Santoy, O., superintendent and mine boss. Shaft opening, 214 feet deep. No. 6 seam, about 4 feet thick. Fan ventilation, machine mining. Has been idle for about two years. Visited November 30th; found them cleaning up mine, and repairing, preparatory to an early resumption of work.

Northwest No. 26.

Located one-half mile south of Corning, Ohio, on the T. & O. C. R. R. Operated by the Chicago & Hocking Coal Co., Toledo, Ohio. Slope, 300 feet long to No. 6 seam of coal. Daniel Cook, Corning, O., superintendent and mine boss. Fan ventilation, machine mining, employs 26 loaders, 2 machine runners and 10 day hands. Visited September 8th; found idle. Had been idle for nearly two years. Visited December 9th; found mine in fair condition: water pipe was being used for electric return; requested return wire put in, which Mr. Cook agreed to do.

Chapman No. 1, Nos. 1 and 2 Opening.

Located one mile west of Moxahala, Ohio, on a branch of the T. & O. C. R. R. Operated by the Chapman Mining Co., Moxahala, O. H. N. Rose, superintendent; Robert Robb, mine boss, both of Moxahala, O. No. 1 opening is slope, 160 feet long to No. 6 seam of coal. Fan ventilation, machine mining; employs 6 loaders and machine runners and 2 day hands. No. 2 is a drift to the same seam of coal, and practically the same conditions as No. 1. Employs 54 loaders, 10 machine runners and 15 day hands. Visited August 24th; found mine idle. December 8th, found No. 1 opening fair for force of men employed. No. 2 opening in fair condition, except some trolley wire extended past the last breakthrough in entries; requested it removed. Motors are used to gather the coal in these mines.

Chapman No. 2, Nos. 3 and 4 Opening.

Located one mile west of No. 1 on same railroad, and is operated by the same company. B. F. Chapman, Moxahala, Ohio, superintendent; C. W. Holmes, New Lexington, Ohio, mine boss. Slope, 160 feet long, No. 6 seam, about 3½ feet thick. Both openings practically in same condition. Fan ventilation, machine mining; employs 34 loaders, 6 machine runners and 13 day hands. Visited September 9th; found both openings in fair condition. It is the intention to install gathering motors in these openings in the near future.

Bear Run No. 1.

Located at Gauston, O., on C. & M. V. R. R. Operated by W. A. Gosline & Co., Toledo, Ohio. E. W. Lewis, New Lexington, O., superintendent; W. A. Davis, same place, mine boss. Shaft, 64 feet deep, No. 6 seam, about 3½ feet thick; fan ventilation; machine mining; employs 30 loaders, 8 machine runners and 19 day hands. Visited October 29th; had been idle for seven months on account of power house being destroyed by fire; mine in fair condition, considering its suspension.

Crescent.

Located on a branch of the C. & M. V. R. R. near Roseville, O. Operated by the Kennon Coal & Mining Co., Cleveland, O. Thos. Evans, Roseville, O., superintendent and mine boss. Drift on mine, No. 3 seam of coal about 4 feet thick. Fan ventilation; machine mining; employs 36 loaders, 10 machine runners and 19 day hands. Visited September 3rd; found mine in fair condition. November 9th, mine in fair condition. Since my visit on September 3rd, the Zanesville Coal Co., Crooksville, O., has purchased this mine. Visited December 20th; tested a pair of Fairbanks Hopper scales, found them correct, and other conditions fair.

Peerless.

Located at Saltillo, O., on the Z. & W. R. R. Operated by Hamilton & Wallace Coal Co., Saltillo, O. Wm. Wallace, Saltillo, O., superintendent; Edw. Moore, same place, mine boss. Drift, No. 6 seam, about 3½ feet thick; furnace ventilation; machine mining; employs 20 loaders, 4 machine runners and 11 day hands. Visited August 25th; mine idle. November 3rd, found mine in fair condition; requested door between 1st and 2nd east entry in place of curtain.

Lilly.

Located three-fourths of a mile east of New Lexington, O., on the C. & M. V. R. R. Operated by the Lilly-Hocking Coal Co., Columbus, O. B. F. Eddy, New Lexington, O., superintendent and mine boss. Drift, No. 5 seam, 4½ feet thick; furnace ventilation; pick mining; employs 7 miners and 2 day hands. Visited November 8th; found ventilation very poor. Were just driving 1st entry for a new intake; had 30 feet to go. November 29th, tested pair of Howe hopper scales; found them weighing correctly.

Pine Run No. 44.

Located about two miles north of Carrington, O., on a branch of the Z. & W. R. R. Operated by the Johnson Coal Mining Co., Columbus, O. John Paskell, New Lexington, O., superintendent; J. T. Roberts, Shawnee, O., mine boss. Slope, 165 feet long; No. 6 seam, about 5 feet thick. Fan ventilation, machine mining; employs 38 loaders, 10 machine runners and 24 day hands. This mine was idle for about one year, but started to operate on November 22nd. Visited December 23rd; found mine in fair condition. December 31st, company ordered mine equipments moved and mine abandoned.

MINES IN PERRY COUNTY REMAINING SUSPENDED DURING THE YEAR.

Pedlow or Sunday Creek No. 321.

Located at Misco, Ohio, on Z. & W. R. R. Owned by Sunday Creek Company, Columbus, O.

Beech Grove.

Located at McLuney, Ohio, on the C. & M. V. R. R.

Lyonsdale.

Located at Green Valley on the C. & M. V. R. R.

SMALL MINES IN PERRY COUNTY EMPLOYING LESS THAN TEN MEN.**Watts.**

Located near Crooksville, O. Operated and managed by C. H. Watts, Crooksville, O. No. 6 seam, $3\frac{1}{2}$ feet thick; employs 5 miners. Visited November 15th. Natural ventilation.

Wingate.

Located near Crooksville, O. Operated and managed by O. W. Wingate, Crooksville, O. No. 6 seam, $3\frac{1}{2}$ feet thick; furnace ventilation; employs 3 miners. Visited November 15th.

Ironpoint.

Located near Shawnee, O. Operated and managed by D. L. Richards, Shawnee, O. Drift, No. 6 seam, 5 feet thick; natural ventilation; employs 4 miners. Visited November 22nd.

O. Cannon.

Located near Crooksville, O. Operated and managed by O. Cannon, Crooksville, O. No. 6 seam, $3\frac{1}{2}$ feet thick, employs 5 miners. Visited November 15th.

O'Donnell.

Located at New Straitsville, O., and is operated and managed by Jas. O'Donnell, New Straitsville, O. Drift, No. 6 seam, about 6 feet thick. Natural ventilation; employs 5 miners. Visited December 2nd.

Sines Bros.

Located near New Straitsville, O. Operated by the Sines Bros. Coal Co., New Straitsville, O. Robert Sines, same place, superintendent and mine boss. Drift opening, No. 6 seam, 6 feet thick; natural ventilation; employs 8 miners and 1 day hand. Visited December 2nd.

Abrams.

Located near New Straitsville, O. Operated and managed by Wm. Abrams, New Straitsville, O. Drift, No. 6 seam, 6 feet thick; natural ventilation; employs 4 miners. Visited December 3rd.

No. 107.

Located at New Straitsville, O. Operated and managed by Thompson & Thomas Coal Co., New Straitsville, O. Drift, No. 6 seam, 6 feet thick. Natural ventilation; employs 5 miners. Visited December 3rd.

No. 9.

Located at New Straitsville, O. Operated and managed by Jack Richardson, New Straitsville, O. Drift, No. 6 seam, 6 feet thick; natural ventilation; employs 6 miners; visited December 3rd.

Ambrose Gibbs.

Located on Rock Run on B. & O. R. R. Operated and managed by Ambrose Gibbs, New Straitsville, O. Drift, No. 6 seam, 6 feet thick; natural ventilation; employs 6 miners. Visited December 3rd.

Webbs.

Located on Rock Run on B. & O. Ry. Operated by Webb Coal Co., New Straitsville, O. Drift, No. 6 seam, 6 feet thick; employs 6 miners; natural ventilation. Visited December 3rd.

Cannon.

Located on Rock Run on B. & O. R. R. Operated and managed by Joseph Cannon, Shawnee, Ohio. Drift, No. 6 seam, 6 feet thick; natural ventilation; employs 4 miners. Visited December 3rd.

CLAY MINES IN PERRY COUNTY.**O. M. & M. C. Clay.**

Located at Shawnee, Ohio, on Z. & W. and B. & O. railroads. Owned by Ohio Mining & Mfg. Co., Shawnee, Ohio, and leased by Davis Bros., Shawnee, O. E. W. Davis, same place, superintendent and mine boss. Two shafts, 82 feet deep; fan ventilation; employs 21 miners and 6 day hands. Visited August 6th; found mine in fair condition.

I. C. B. Co. Clay.

Located on Rock Run branch of B. & O. R. R. Operated by Iron Clay Brick Co., Columbus, O. F. Grimes, Shawnee, Ohio, superintendent; R. D. Jones, same place, mine boss. Drift, furnace ventilation, and employs 10 miners and 5 day hands. Visited August 18th; mine in fair condition.

Impervious Clay.

Located at New Straitsville, O., on Hocking Valley R. R. Operated by Straitsville Impervious Brick Co., New Straitsville, O. J. D. Martin, superintendent; Frank Francis, mine boss, both of New Straitsville, O. Fan ventilation; employs 7 miners and 3 day hands. Visited December 2nd; mine in fair condition.

Shawnee Flash Clay.

Located at Shawnee, on Z. & W. R. R. Operated by the Shawnee Flash Brick Co., Columbus, O. E. M. Starner, Shawnee, O., superintendent and mine boss. Shaft, 90 feet deep; fan ventilation; employs 6 miners and 2 day men. Visited October 4th and 13th; found mine ventilation fair, and cover on cage broken; requested it repaired. The mine was not equipped with second opening; requested superintendent to not permit anyone to work in mine other than for the purpose of making second opening. The mine was suspended, and remained so the remainder of the year.

SMALL CLAY MINES IN PERRY COUNTY—(Product goes to Crooksville Potteries. Visited November 15th and 16th. They are all on Burley Run ranging from one-half mile to two miles from Crooksville, O.

| | |
|------------------------|-----------------------------------|
| D. Bradshaw | 1 miner. |
| Wm. Brown | 2 miners. |
| M. Gossman | 2 miners. |
| H. E. Stoneburner..... | 2 miners. |
| E. Taylor | 2 miners. |
| O. W. Wingate..... | 2 miners. |
| T. O. Moore..... | 4 miners. |
| O. King..... | 3 mines and 1 miner in each mine. |

MORGAN COUNTY.

Tropic.

Located at Tropic Station on Z. & W. R. R. Operated by Tropic Mining Co., Toledo, O. C. Spring, Rose Farm, Ohio, superintendent; Jas. Fleming, same place, mine boss. Slope opening, 900 feet long to No. 6 seam, about 4 feet thick. Machine mining; fan ventilation, and employs 168 loaders, 32 machine runners and 60 day men. Visited August 2nd; tested pair of U. S. Standard hopper scales; found them weighing incorrectly; after some repairs, found them correct. Visited October 7th; was unable to make a thorough inspection on account of motor running through main entry door and operations ceased until repaired. December 15th, found mine ventilation very poor. Three air shafts were used for intake, but were not giving good results. Requested mine boss to drive 6 east entry out for an intake and build brick and cement stoppings; superintendent started a force of men at once on both. Visited December 18th, to complete my inspection, and to see if ventilation was improving; found several brick stoppings, and 6th east entry out to crop line, and ventilation improved.

Rose.

Located near Tropic Station on Z. & W. R. R. Operated by the Carding Coal Co., Columbus, Ohio. Geo. Carding, Rose Farm, Ohio, superintendent; Geo. Lamb, same place, mine boss. Drift, No. 6 seam, 4 feet thick. Machine mining; fan ventilation; employs 76 loaders, 10 machine runners and 34 day

Visited August 20th and December 16th; found mine in generally good condition on both visits, except some dust on motor; requested mine boss to make and remove.

Woods.

Located near Tropic Station. Operated and superintended by John Woods, Farm, Ohio. Drift to No. 6 seam of coal, 4 feet thick; employs 5 miners. Natural ventilation. Wagon transportation. Visited November 16th.

FOLLOWING MINES WERE VISITED WITH INSPECTOR W. H. TURNER—(Will be found in detail in his report.)

Guernsey County.

| | |
|-----------------------|-----------------|
| Forsythe Mine | September 20th. |
| Minnehaha Mine | September 21st. |
| Detroit Mine | September 23rd. |
| Walhonding No. 2..... | September 24th. |

Noble County.

| | |
|------------------|-----------------|
| Laura Mine | September 22nd. |
|------------------|-----------------|



FIFTH DISTRICT

W. H. TURNER.

COMPOSED OF GUERNSEY, NOBLE AND WASHINGTON COUNTIES, AND
THE COCHRAN AND MEDIA MINES IN BELMONT COUNTY.

Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio:

Dear Sir:—I herewith submit the annual report of the Fifth Mining District of Ohio for the year beginning January 1, 1909, and ending December 31, 1909.

During the early period of this year, owing to depressed trade, many of the mines suspended operation; five continued idle the entire year, others resumed as the trade justified, and continued in active operation.

With some opposition, which is noted in the reports of the respective mines, we have secured the enforcement of the recently enacted laws and rules issued by the mining department in all the mines under our supervision. Some of the owners complied readily, and their managers gave every assistance in maintaining discipline and a rigid enforcement of the rules, for which we wish to extend our appreciation.

The fact that only 3 fatalities occurred in Guernsey county, as compared with 16 the previous year, demonstrates the results rewarded by the increased vigilance demanded and executed. We earnestly hope that this will stimulate activity to further reduce the number of fatalities, and disprove the false idea that "what is to be, will be."

We realize with proper precaution and obedience to rules and regulations, the number of accidents could have been further reduced this year. We recognize a prevailing and increasing danger unprovided for by law, which was referred to in our previous report, the importance of which cannot again be passed by without further commentation and admonition.

Modern equipments, enabling the removal of large areas of coal to the original openings, are placing men to work from one to three miles from their only chance of escape in case of an emergency. Electric wires are strung this entire distance; fires are frequently started from wires grounding; a flow of petroleum oil frequently emits from the top in some of the shaft mines in the No. 7 coal; spontaneous combustion is a known factor in producing underground fires; fire-damp is no stranger. When we consider all of these possibilities for a calamity, it prompts us to urge that shafts be sunk in the interior of the mine for ready escape at all times, and we sadly predict, unless provisions are made for a series of escape ways to follow the advanced workings, the Cherry mine disaster is only the beginning in history of similar catastrophes to follow. We have recommended interior openings made at all the extensive mines, and we are pleased to note that an escape-way of this nature has about been completed by the Cambridge Collieries Co., at their Ideal mine. It is also their intention to provide similar escape-ways in their other mines.

Some owners have declared their inability to meet the additional expense on account of the low prices at which they are compelled to sell their product.

We believe every safeguard should be placed around underground workers necessary for reasonable protection, by our statutes, and the product sold at a price which would provide these measures of safety. No civilized citizen desires to profit at the cost of the lives of honest workmen. A fortune gathered by venturesome and murderous men, bestowed on churches, colleges or municipalities, will not atone for the misery and distress for which it is accountable.

We have no new developments to report during this year. Three mines were exhausted and abandoned.

Our official dealings with both operators and miners have been reasonably pleasant, considering the many changes enforced during the year. The usual permanent improvements have been made when conditions required them.

Extending to you our hearty appreciation for the wise counsel and valuable advice rendered in the complicated affairs affecting our duties.

Respectfully,

W. H. TURNER, Cambridge, Ohio,

Inspector Fifth District.

December 31, 1909.

BELMONT COUNTY.

(Warren Township. No. 8 coal, seam 4 to 5 feet thick.)

Cochran.

Drift, situated on the B. & O. R. R. near Baileys Mills, O. Operated by the W. A. Werner Coal Co., Zanesville, O. Thos. Davey, superintendent; Mer Booth, mine foreman, both of Baileys Mills, O. Operation suspended September 23, 1908; still idle when visited April 20th of this year. New laws and rules were posted at the mine; advised these conformed to while the mine was idle, as far as wire regulations and machine shields were concerned. November 3rd, found that the mine had operated the day previous, with machines unshielded, but had suspended again while placing the shields on the machines, which were on the ground. A number of men were engaged in re-laying wire and re-timbering the escapement way, and repairing stoppings and improving ventilation, which was found deficient at the face of every entry worked. Ordered the delinquent map extended; additional safety holes were laid along the motor line; a refuge hole made for the trapper located at the pit entrance, and all miners to be equipped with copper blasting tools and they were permitted to resume mining. December 13th, being notified of a continued delay in the map, called upon W. A. Werner, at Zanesville, who assured us that the map would be forthcoming at the earliest convenience. Eighty miners and 30 day men will be employed when a full complement of men is secured. Electric haulage and mining, and furnace ventilation in use. Recommended the installation of a fan as an adequate means of ventilation.

Media.

Drift, located one-half mile east of Baileys Mills on the B. & O. R. R. Operated by the Colburg Coal Co., Columbus, O. Chas. Elliott, manager, Baileys Mills, O. Fan ventilation, electric mining, haulage and pumping; employs 22 miners and 9 day men. April 20th, found mine had resumed operation. February 6th, machines were not shielded, and all wires were not strung in conformity with rules; ordered Mr. Elliott to cease operating the machines until they were equipped with approved shields, and to place all wires in proper position during the delay. July 26th, previous orders had been complied with and conditions approved, copper tools being in general use. An oil well was being drilled on this coal field by persons interested in the coal company, called Mr. Elliott's attention to section 306-1, ordering its provisions complied with. November 3rd, found mine in good condition.

GUERNSEY COUNTY.

NOTE—All mines are located in No. 7 coal seam, which runs from 5 to 7 feet, excepting Union No. 1 and Indian Camp, which are in No. 6, coal varying from 2½ to 3½ feet in thickness.

P. Y. Cox is the general superintendent, with office at Cambridge, Ohio, of the following eight mines controlled by the Cambridge Collieries Co., Cleveland, O.

Ideal.

Shaft, 75 feet deep, situated on the Pennsylvania R. R., near Byesville, O., controlled by the Cambridge Collieries Co., Cleveland, O. D. B. Morse, superintendent, and Robt. Robison and James James, mine foremen, all three of Byesville, Ohio. Fan ventilation, electric mining and haulage; employs 325 miners and 118 day men. January 25th, investigated accidental death of Joseph Aduddle, a trapper, run down by a motor. February 24th, conditions approved, with a recommendation that additional shafts be sunk at both the north and south interior of the mine, and the shield law and wiring rules complied with. May 3rd, Jeffrey machines were shielded on the near side only; ordered both sides shielded, and a closer observance of the wiring rules. June 29th, a long line of cement stoppings had been erected between the main airways; copper blasting tools and powder boxes provided; requested safety holes made on the entry side opposite all wires along the motor lines. October 14th, requested the discontinuance of an open fire for drying sand within 43 feet of the fan house and tippie. December 10th, ordered dust sprinkled on 26, 27 and 28 west entries and removed from the mine; suggested that faucets be used, if possible, for drawing machine oil from the barrels at the various oil stations, in preference to the wasteful, dangerous methods practiced. We are pleased to report that an escape shaft is nearing completion near the north interior of this mine.

Walhonding No. 2.

Shaft, 161 feet deep, located on the Eastern Ohio Branch of the B. & O. R. R., one and one-half miles east of Buffalo, Ohio, with transportation over both this and the Pennsylvania R. R. system. Controlled by the Cambridge Collieries Co. J. C. Henderson, superintendent, Buffalo, O.; Chas. O. Morrow, mine foreman, Pleasant City, O. Fan ventilation, electric mining, mule haulage, employs 116 miners and 54 day men. March 31st, second opening was nearing completion; ordered mine boss to cease operating the mining machine until shields for same were attached. May 18th, second opening found completed and stairs made, ready to erect, and brick stoppings being built between main airways. Ordered a cut-around made at shaft bottom and the dangerous practice of crossing through the cages stopped. Gas was generating freely in the north on this occasion. August 6th, recent orders complied with, and the sanitary conditions commendable, but discovered while the wiring conformed to the rules, the positive current was on the lower wire. J. C. Henderson, who had recently assumed the management, ordered the electrician to change the power to the upper wire. September 24th, assisted by Isaac Hill, inspector of fourth district, found some of the last breakthroughs in entries which constitute a part of the main airway, obstructed with gob, thrown there by a careless workman. Persons were put to work removing it before we left said entries. October 9th, accompanied by Miss Kincaid, chief clerk of the mining department, general conditions were approved. We appreciated the courtesy extended by Mr. Henderson, while showing our honored guest through the mine.

Hartford.

Shaft, 85 feet deep, situated on the Eastern Ohio Branch of the B. & O. at Buffalo, O. Controlled by the Cambridge Collieries Company. H. E. Cameron, superintendent; O. P. Moss, mine foreman, both of Buffalo, O. Fan ventilation, electrical equipment, employing 186 miners and 57 day men. March 4th, found shield law, wiring rules and safety hole regulations being ignored. Specific orders were given the management to cease operating the machines until they were equipped with approved shields, and to change wires and provide safety holes during the delay. March 31st, orders concerning wiring and safety holes had been executed, but the shields ordered had not reached their destination, the mine continuing idle. May 27th, all previous orders complied with and conditions commendable. Notified management that copper blasting tools, approved by the mining department, were accessible, and must be placed in the mine for general use at the earliest convenience. September 10th, being informed that the fan house, located one mile from the tippie, had been consumed by fire, originating from electric appliances, visited the scene, finding every precaution being exercised against danger and the structure nearing completion. November 8th, investigated death of Edw. Hill, motorman, resulting from injuries received September 26, 1909. Copper blasting tools had been in general use since July 1st. General conditions approved.

Trail Run No. 1.

Shaft, 72 feet deep, situated on the Pennsylvania R. R., at Trail Run. Controlled by the Cambridge Collieries Co. Matt Strauch, superintendent; Geo. Slay, mine foreman, both of Robins, O. Fan ventilation, electric mining, cable haulage; employs 146 miners and 63 day men. April 29th, ordered management to cease operating two machines until they were equipped with approved shields. Much to our gratification, preparations were about completed to displace the deadly alternating current with 250 volts direct current. July 15th, direct current installed; cement stoppings extending to 16 east entry erected. Conditions commendable. November 5th, no orders were given.

Trail Run No. 2.

Shaft, 112 feet deep, located near No. 1, controlled by the same ownership. A. L. Black, superintendent; Jos. Wootton, mine foreman, both of Robins, O. Fan ventilation, electric equipments, employing 169 miners and 63 day men. February 4th, ordered mining machines equipped with approved shields, and constant precaution exercised while removing an excessive flow of petroleum oil entering the mine; C. Walker, a trapper under age, removed from the mine; dust sprinkled in the dry sections and removed to the surface; partition between down and upcast repaired, and copper blasting tools placed in use. March 26th, a large tank of oil sat near the escape slope, a railroad tank full under the tippie, and the reservoir containing boiler water covered with oil. Mr. Black informed us that 1,100 barrels had been pumped from the mine during the present month, and he had not received enclosed tanks sufficient to dispose of it. We informed Mr. Opperman, general manager at that time, of the situation. Barrels were sent and the open tank emptied. The reservoir was ditched, the oil sent down the creek, and the railroad tank hauled away. Arrangements were made to keep an enclosed tank on the switch above and a safe distance from the tippie, and pump the oil direct to said tank, believ-

ing the flow would diminish in a few days. The Crown Oil Co. began drilling to the coal for the oil which overlies the coal seam; ordered maps of each well made and filed, which was promptly complied with. June 16th, ventilation being deficient on the 1st, 2nd, 3rd and 4th east and sub-north entries, ordered Mr. Black to remove the men from said entries until lawful ventilation could be provided and maintained in that section of the mine. He insisted upon evading the order, until an injunction was threatened. He then became indignant and stopped the entire mine. August 3rd, made partial inspection, being detained on account of an accident at Laura mine. August 17th, conditions were very unsatisfactory. General Superintendent P. Y. Cox became interested and forced repairs made, requesting me to return soon. October 6th, accompanied Mr. Cox through the mine, and with the exception of a few instances, where wires were nailed to posts, conditions were approved. December 30th, tested the scales, finding them accurate.

Detroit.

Shaft, 185 feet deep, located on the Pennsylvania R. R. near Ava, Ohio. Owned by the Cambridge Collieries Co. Thos. Stiff, superintendent; J. Oldroyd, mine foreman, both of Ava, O. Fan ventilation; has electrical equipments, and employs 150 miners and 69 day men. January 29th, ordered mining machines equipped with approved shields, and wires strung to conform to rules. June 3rd, shields were provided, but wiring rules were being ignored. Gave a specific order, and returned August 5th, finding all previous orders complied with. Copper blasting tools in general use in the mine, and conditions satisfactory. September 23rd, mine was found in lawful condition, but recommended, with the approval of the mining department, that an escapement shaft be sunk near the north interior of the mine, for ready escape should the men become entombed from any cause. November 23rd, present laws and rules were being observed; requested that the dry lagging be removed from overhead in the entry near the approach to both shafts.

Midway.

Slope, 100 feet long, located on the Pennsylvania R. R. near Byesville, O. Controlled by the Cambridge Collieries Co. Geo. E. Hall, superintendent; Thos. Bradbury, mine foreman, both of Byesville, O. Provided with fan ventilation and electric equipments. Employs 113 miners and 38 day hands. March 5th, loose slate was ordered down along the motor road, and safety holes provided in entry rib opposite all wires, also the use of copper blasting tools adopted. March 8th, improvements were progressing. April 12th, conditions were approved concerning repairs. May 11th, ordered safety holes provided along the motor road recently extended to the new hill. A new shaft provided with stairs was completed in the new territory, now numbering two escape shafts; one in the north and the other in the south interior of the mine, making it impossible to entomb the employes from any cause. June 24th, found mine in good condition, but copper blasting tools were not in general use. August 2nd and October 15th, conditions were commendable; copper blasting tools had been placed in general use, July 1st, in compliance with general order issued by the mining department.

Blue Bell.

Shaft, 85 feet deep, situated on the B. & O., near Blue Bell, O. Controlled by the Cambridge Collieries Co. J. M. Burt, superintendent; T

Kachley, mine foreman, both of Pleasant City, O. Fan ventilation, electric equipments, employing 43 loaders and 24 day men. Numerous faults which are being pierced, reduced the former capacity of this mine and the complement of employes by reducing the workable territory. March 19th, ordered approved shields placed upon the mining machines, and electric wires strung to conform to the rules governing same. April 4th, investigated the accidental death of Austin Bird, fire boss, who was killed by a fall of slate while in the act of erecting a door in the mine. On this occasion, found the shield law still being violated; ordered Mr. Burt to cease operating the machines until they were equipped with approved shields. Obeying the order caused several days' idleness while awaiting the arrival of the shields from the factory. July 12th, investigated death of Aretes Meighen, resulting from injury received by leg being crushed between motor and rib, while operating the motor with his leg on the outside of said motor. October 13th, an excessive flow of gas had been struck by the previous night shift in the mud entry crossing a ravine to intersect the coal field on the opposite side. Work had suspended in that section until the gas could be safely controlled. The entry being 60 feet in advance of the last breakthrough made, and the gas emitting from the top at the face, we were unable with safety, to reach within 25 feet of the face with a safety lamp; ordered a canvas brattice erected in the entry, and the gas removed by an air current, also naked lights kept out of the return airway until the flow of gas abated, which we realized from the shallow cover of 35 feet over the entry, would surely follow; the order being carried out, we were informed a few days later that the gas fissure had exhausted. Four escape ways, provided with winding stairs, in addition to the hoisting cages, are in good traveling condition at this mine, placing it as the best guarded shaft mine against the entombment of employes in this district. Passing through faults with single entries caused these shafts to be sunk, in order to ventilate the coal field beyond, and the management kindly added the stairs. The writer would be greatly relieved from the fear of calamity if all our shafts having persistent coal were equally provided with escape ways.

Imperial No. 1.

Shaft, 110 feet deep, located on the Pennsylvania R. R., at Derwent, O. Operated by the O'Gara Coal Co., Chicago, Ill. Jas. Orr, superintendent; W. A. Oliver, mine foreman, both of Byesville, O. Fan ventilation, electric mining, both motor and cable haulage. Employs 157 miners and 63 day men. March 22nd, mine still continued idle from suspending September 16, 1908. The recently enacted mining laws and rules were presented, requesting their enforcement when operation resumed. Being duly notified that the section of the mine known as rock entry would resume operation, October 20th this portion of the mine was examined, and the conditions approved under existing laws. October 26th, tested scales, finding them accurate, but ordered the use of a dummy weight, which proved 100 pounds to the 1,000 pounds in favor of the miners, discontinued. December 13th, entire mine and conditions met with approval, with one exception; an additional escape shaft was recommended sunk at a convenient point in the interior of the mine.

Ohio No. 1.

Drift, located near Cambridge, O., on the Pennsylvania R. R. Operated by the O'Gara Coal Co., Chicago, Ill. Jas. Orr, superintendent, Byesville, O.;

Joseph Alloway, mine foreman, Cambridge, O. Employing at present 4 miners and 1 day man. Operation suspended March 31, 1908. Being duly notified that the mine would resume August 26th of this year, producing domestic coal for wagon trade only, made an examination and approved of the condition. October 29th, no orders were given. Furnace ventilation and mule haulage, delivering the coal to the surface.

Ohio No. 2.

Shaft, 65 feet deep, located on the Pennsylvania R. R. near Byesville, O. Operated by the O'Gara Coal Co., Chicago, Ill. James Orr, superintendent; Harry Dudley, mine foreman, both of Byesville, O. Fifty-eight miners and 32 day men are employed. Fan ventilation, electric mining, mule haulage, is the mode of operation. February 16th, ordered mining machines equipped with approved shields, and wiring rules enforced. April 8th and 9th, examined this mine, and maps of both this and the abandoned Pioneer mine, which is full of water; estimating the thickness of the barrier of coal between the two mines, ordered room 13 stopped or advance holes drilled. June 15th, tested the scales, finding them accurate. Machines were all shielded on this date. Complaints were offered that some of the machine men were wrecking the shields purposely to evade working with them on. Notified all machine men that prosecution would follow against all persons who attempted to operate a machine after the shield was broken off. August 2nd, investigated accident causing the death of Richard Diss. November 24th, one machine found unshielded, which had been idle and the shields removed, beginning operation. Informed the operator he would be prosecuted if he attempted to operate the machine, consequently he returned home until shields were replaced. Mr. Dudley claimed he did not know the shields were off until I informed him.

Red Oak.

Drift, situated near Byesville, O., on the Pennsylvania R. R. Operated by the Domestic Coal Co., Cambridge, O. J. F. Wilson, manager, Cambridge, O. Furnace ventilation, compressed air mining, mule haulage. Employs 11 miners and 3 day men. March 10th, ordered the shields, which had been provided, put on machine and kept there while the machine was operating. July 2nd, found the mine had been idle since March 31st. Being duly notified that operation would resume, September 14th made a thorough examination of the mine; ordered all loose slate cared for; furnace cleaned out and fired, and a map of the mine made and filed. October 22nd, again requested map provided; otherwise, conditions were approved.

Murray Hill.

Slope, located near Klondyke, on the B. & O. R. R. Operated by the Akron Coal Co., Akron, O. Wm. Rigby, superintendent, Cambridge, O.; Clarence Long, mine foreman, Kipling, O. Fan ventilation, electric mining, mule haulage, cable hoist, employing 40 miners and 15 day men. February 25th, ordered compliance with the new laws and rules. July 20th, previous orders conformed to and conditions approved. October 7th, investigated death of Steven Loricer, who was killed by a fall of slate while setting a post in his room. With the exception of muddy roads, conditions approved. This mine has reached the limits of the territory and is fast nearing exhaustion.

Klondyke.

Slope, 150 feet long, located on the B. & O. R. R. at Klondyke. Operated by the Loomis-Moss Coal Co., Akron, O. Jas. Moss, Cambridge, O., superintendent; Allen Treherne, Kipling, O., mine foreman. Fan ventilation, electric mining, cable haulage. Employs 83 miners and 32 day men. February 26th, conditions approved. Recommended shaft sunk near the east interior of the mine in preference to erecting the long line of cement stoppings from present openings, and to secure ready escape in case of an emergency. July 16th, ordered recent falls cleared from the entrance to the escape shaft. November 30th, previous orders complied with and the travel way placed in a commendable condition.

Kings.

Shaft, 100 feet deep, located on the B. & O. R. R., near Lore City, O. Operated by the Morris Coal Co., Cleveland, O. A. J. Lafferty, Cambridge, O., superintendent; Walter Sneddon, Lore City, O., mine foreman. Fan ventilation, modern electric equipments, employing 242 miners, 121 day men. February 9th, finding ventilation deficient on 1st and 2nd north, 79 and 80 west entries, ordered the management to remove the men from those entries until lawful conditions could be secured. Returned February 13th; found mine idle while the fan was being repaired. February 17th, repairs completed, and ventilation approved. Safety holes were being made along motor roads in the ribs opposite all wires; requested an early completion of this work; also ordered copper blasting tools secured at the earliest opportunity. May 19th, safety holes approved, and efforts being made to secure the blasting tools. Wm. Wilson being mine foreman at this time, the commendable condition of the ventilation was evidence of his unquestioned competency and vigilance. August 13th, found W. H. Turvey had assumed the duties of mine foreman. On July 16th, copper blasting tools were in general use and conditions satisfactory. November 18th and 19th, Walter Sneddon had succeeded Mr. Turvey, who had recently resigned as mine boss. Ventilation was found in good condition. Ordered wires on 12th east entry strung to conform to rules; a refuge hole made for a crippled trapper at door near bottom landing; new cribbing placed around the top of the second opening, also recommended an opening made near the interior of the mine as a ready escape for the men in case of an emergency.

Old Orchard.

Shaft, 48 feet deep, situated on the B. & O. R. R., near Mineral Siding, owned by the Morris Coal Co., Cleveland, O. A. J. Lavery, superintendent; Samuel Hadden, mine foreman, both of Cambridge, O. Fan ventilation, modern electric equipments installed. This mine suspended March 31, 1908, and remains idle at this writing. May 23th, 2 inside and 1 outside day hands employed. Only boiler fuel was being produced. Ordered shields provided for the machine in use. December 16th, some outside repairs being made, indicated an early resumption in the following year, 1910. Called attention to the recently enacted laws and rules, requesting that the mine be made to conform to them prior to renewing operation. The machine in use was equipped with shields.

Black Top.

Shaft, located on the B. & O. R. R. near Lore City, O. Operated by Morris Coal Co., Cleveland, O. A. J. Lavery, superintendent; J. S. Hughes, mine

foreman, both of Cambridge, O. Fan ventilation, electric mining and haulage. This mine suspended July 7, 1908, and remained so the greater portion of the present year. September 9th, four men were employed producing boiler and domestic coal, which was produced first from safety holes cut as rules direct along motor lines. We learned that miners accompanied the fire boss into the mine; ordered Jos. Smith, then mine foreman, to hold the men on top until the fire boss reported conditions safe. Being notified that operations would commence October 1st, was present and made a thorough examination of the mine. Conditions were found reasonably good considering the long idleness.

Cleveland No. 1.

Shaft, 198 feet deep, situated at Senecaville, O., on the B. & O. R. R. Owned by the Morris Coal Co., Cleveland, O. Edw. Lynch, superintendent; Thad. Wood, mine foreman, both of Senecaville, O. Fan ventilation, modern electric equipments. Operation suspended September 23, 1908, and continued idle the greater portion of the year. August 19th, found that five men were being employed two days each week, producing boiler and domestic fuel. Safety holes had been cut along the motor road, conforming with the rules. Eleven and 12 east entries were being advanced in view of extending the motor road. Several sets of stairs nearest the top of the escape shaft were found decayed and unsafe for travel; requested immediate repairs made. September 28th, investigated the death of Edw. Hinchcliff, who died from injuries received in this mine on December 12, 1906. On being duly notified that operation would resume December 8th, was present and carefully examined the mine, finding new stairs erected, and the electric wires boxed, extending down the escape shaft. With the exception of one leak in the steam pipe, which was ordered repaired, the escape was satisfactory. Ordered some combustible matter removed from the mule stable; requested electric lights installed, and the use of open lights discontinued in the stable. Sixty-three miners and 34 day men were enrolled, intending to increase the number of miners as necessity would require.

West Branch.

Slope, 66 feet long, located near Byesville, O., on the Pennsylvania R. R. Operated by the Clinton Mining Co., Cambridge, O. Fan ventilation, electric mining, mule haulage and cable hoist. F. S. Rainey, manager, Byesville, O. Employs 52 miners and 16 day men. February 19th, ordered map made of the mine to determine the proximity to the abandoned and flooded Sugar Grove mine, and the mining machines equipped with approved shields. June 28th, the survey was contracted for, and other conditions approved. A recent fire had destroyed the tracings of the Sugar Grove mine; secured the map on file, necessary to determine the extent of the coal barrier between these two mines. September 8th, map had been made and the west workings approaching Sugar Grove mine suspended, but the map did not contain extensions in full. September 27th, requested the management to extend the map to the mine limits before resuming operation on the west side. December 23rd, found door on the escape shaft impassable by being blocked with ice, which was immediately removed; also ordered that hereafter it be kept clear of obstruction, and all miners to secure powder boxes. Found some kegs containing powder located where a cable could come in contact with them; again requested that the maps be extended prior to resuming operation on the west side of the mine, and the usual advance holes drilled.

Little Kate No. 1.

Shaft, 92 feet deep, located on the Pennsylvania R. R. near Byesville, O. Owned by the National Coal Co., Cleveland, O. G. L. Walkinshaw, superintendent; G. W. Chambers, mine foreman, both of Byesville, O. Fan ventilation, electric equipments; steam cable hoist. March 11, found mine had suspended operation indefinitely on March 1st, due to dull trade. July 27th, idleness continued. Being notified that work would resume on November 16th, made a thorough inspection of the mine on that date. With the exception of a few wires that had been replaced by recent falls, and a few broken timbers which were ordered repaired, conditions conformed to the mining laws. Recommended a shaft sunk near the interior of the mine for a ready retreat in case of an emergency.

Minnehaha.

Slope, 115 feet long, situated on the Pennsylvania R. R., five miles west of Byesville, O., and formerly called Buckeye mine. Operated by the National Coal Co., Cleveland, O. G. L. Walkinshaw, superintendent; H. A. Frame, mine foreman, both of Byesville, O. Fan ventilation, electrical operation absolutely. No mules employed. Two hundred and five miners and 56 day men are engaged. April 13th, ordered trolley wires changed to conform to rules, and copper blasting tools secured for general use. June 25th, found wires in compliance with rules, and copper blasting tools ordered. September 11th, investigated accidental death of John Spencer, assistant to the motorman; found the general conditions of the mine good. September 21st, was assisted by Inspector Hill of the Fourth District in an examination. All things were found satisfactory, and no orders were given. October 8th, we were honored with the presence of the chief clerk of the mining department, Miss M. Kincaid, at this model mine.

Little Kate No. 2.

Slope, 300 feet long, situated on the B. & O. R. R., near Blue Bell, O., and has transportation over the Pennsylvania R. R. Operated by the National Coal Co., Cleveland O. G. W. Walkinshaw, superintendent, and Jas. Martin, mine foreman, Pleasant City, O. Fan ventilation, electrical equipments absolutely. Employs 146 miners and 33 day men. April 22nd, ordered a more strict observance of the wiring laws. July 7th, requested Mr. Haskins, then in charge, to exclude a few miners from the mine until they equipped themselves with copper blasting tools, which were near at hand, selling at reasonable prices. September 17th, Jas. Martin had assumed the duties of mine foreman. Requested closer attention given wires that were being disarranged by frequent falls of slate; otherwise conditions approved. December 22nd, finding several of the protections to cross-over wires torn off by excessively loaded cars, requested Mr. Martin to regulate the height of loading to prevent impairing those protections, or cut trenches in the top and safely bury the wire; requested the removal of ice that was beginning to collect in the traveling slope.

White Ash.

Slope, located near Byesville, O., on the Pennsylvania R. R. Was operated by the Puritan Coal Co., Cambridge, O. W. A. Lucas, same place, superintendent; J. B. Morris, Byesville, O., mine foreman. Fan ventilation, mule haulage, electric mining. Employed 14 miners and 3 day men. January 4th,

ordered machine to be equipped with approved shields. March 11th, pillars were nearing exhaustion and an early finish expected. April 3rd, material drawn out and mine being abandoned on this date. Ordered that copies of the map be filed in the offices of the chief mine inspector and the county recorder.

Puritan.

Shaft, 106 feet deep, located on the Pennsylvania R. R. near Derwent, O. Operated by the Puritan Coal Co., Cambridge, O. W. A. Lucas, same place, superintendent; Denis Conroy, mine foreman, Robins, O. Employs 136 miners and 43 day men. April 7th, ordered a strict observance of rules governing wiring and the handling of explosives. May 26th, previous orders complied with, and conditions approved. August 10th, recommended the stairway enclosed at the surface, and guard rails placed around machinery in the power house. October 27th, a portion of the machinery was supplied with guards; urged its completion at an early date. This mine has fan ventilation and electrical equipments.

Forsythe.

Slope, 110 feet long, situated on the B. & O. R. R. near Mineral Siding, O. Operated by the Forsythe Coal Co., Cambridge, O. H. O. Forsythe, general manager; J. P. Davis, superintendent; Alvey Alderman, mine foreman, all of Cambridge, O. Fan ventilation, modern electric equipments. Employs 201 miners and 54 day men. May 6th, ordered repairs made to increase the ventilation in the section of the mine known as "the hole," and four Goodman machines to cease operating until equipped with approved shields. May 28th, previous orders had been complied with. Approved copper blasting tools now being on the market, requested their general use in the mine at an early date. August 12th, copper blasting tools were in general use. Requested safety holes made along the motor line on the side opposite all wires, and dust sprinkled on the main motor road and hauled to the surface. September 20th, was accompanied on this inspection by Isaac Hill, inspector of the Fourth District; ordered all wires strung on insulators. The safety holes had been made as directed. December 17th and 18th, ventilation was deficient on main north entry, and some wires were found nailed to post. Ordered the mine foreman to disconnect and discontinue the use of said wires until they were strung on insulators, and stoppings repaired to remedy the ventilation; also new stairs placed in the manway. Recommended an additional escape way provided in the interior of the mine, which is essential for good ventilation and ready escape in an emergency.

Guernsey Brick.

Drift, located on the Pennsylvania R. R. near Byesville, O. Operated by the Guernsey Clay Co., Cambridge, O.; Chas. Rabe, same place, manager. Furnace ventilation, pick mining, mule haulage. This mine suspended operation December 24th, 1908, resuming March 1st, 1909. March 9th, found entrance to the escape shaft was becoming unreliable, and recommended that one be secured on the east side of the mine. July 22nd, Mr. Rabe was driving a place to secure the opening recommended. October 21st, new shaft was not yet made. Nine miners and 1 day man employed.

Leatherwood No. 2.

Drift, located on the B. & O. R. R. near Cambridge, O. Was operated by the Leatherwood Consolidated Coal Co., Toledo, O. Operation suspended

March 31, 1903, and with the exception of producing some boiler and domestic fuel, it remains idle at this writing. T. E. Alexander, Cambridge, O., has been appointed receiver. M. Costello, same place, mine foreman. Fan ventilation and electric equipment. June 2nd, 2 miners were employed; ordered shields placed on the machine in use. December 21st, ordered guard rails placed around the machinery in the power house, and advised that provisions be made to warm waiting teamsters outside of the power house.

Little Trail Run.

Slope, 160 feet long, located on the Pennsylvania R. R. near Byesville, O. Operated by the Byesville Coal Co., Byesville, O. David Thomas, Byesville, O., manager. Fan ventilation and electrical equipments, employing 56 miners and 18 day men. March 12th, cement stoppings were being erected; requested the adoption of copper blasting tools. April 15th, learning that the tibble, including the power house, had burned down during the previous night, proceeded to the mine and ordered that no naked lamps should enter the mine until the fan could be placed in operation. June 22nd, found buildings replaced and machinery set, but owing to dull trade and scarcity of water, it still remained idle. October 5th, found continued idleness. Being duly notified that work would resume October 26th, was present and made a thorough examination of the mine. Conditions were approved. Requested Mr. Thomas to use every precaution against accident while resuming. November 9th, investigated death from injury to Harry Deadzuk, who secured employment and entered the slope instead of the travel way, and was injured by a runaway car from the tibble before leaving the bottom, resulting in death a few days later.

Eureka.

Slope, located on the Pennsylvania R. R. near Byesville, O. Was operated by the Cambridge Coal & Mining Co., Parkersburg, W. Va. Thos. Wilkinson, manager, Byesville, O. Fan ventilation, electric mining and mule haulage. Employed 33 miners and 9 day men. January 5th, conditions of the mine approved; requested guard rails placed around the machinery in the power house. March 15th and 16th, while securing delinquent annual statistics, learned mine had been idle since February 1st. July 27th, found track drawn out and mine abandoned.

Valley.

Slope, 119 feet long, located near Byesville on the Pennsylvania R. R. Operated by the Cambridge Valley Coal Co., Cambridge, O. Edw. Stalters, manager, Byesville, O. Steam jet ventilation, electric mining, mule haulage and cable hoist. Employs 24 miners and 9 day men. February 11th, this being a new single opening, found the main entries driven 223 feet from daylight, with no circulation of air. Ordered Mr. Stalters to cease driving those entries until a partition could be erected down the slope, separating the double entries at the bottom, thereby securing a circulation of air by the use of a steam jet. March 3rd, previous orders executed and ventilation approved; requested air shaft completed at the earliest possible date. April 16th, a Buffalo blower had been installed, but failed to compare with the jet in moving air: requested the jet continued and air shaft pushed to completion. June 23rd, finding three sets of entries in operation and ventilation deficient, ordered manager to stop all but the entries approaching the shaft, and push them to

their destination. July 28th, the entry had reached the distance, but the shaft was not yet down. Inside work had stopped. August 9th, found shaft connected, and ventilation approved for the force of men then employed, but requested that an adequate fan be installed and stairs provided as soon as possible. October 5th, stairs were erected, but steam was yet in use for ventilating purposes; ordered the shaft partitioned, to enable travel on the stairs without coming in contact with the steam. November 26th, tested the scales, finding them inaccurate, and advised the services of an expert secured.

Union No. 1.

Drift, located on the Pennsylvania R. R. near Birds Run, O. Owned by the Consolidated Coal Co., Toledo, O. W. J. Williams, receiver, Birds Run, O. Suspended operation June 1, 1908; continued idle during this year. August 16th, Mr. Williams was unable to advise us as to future intentions.

Indian Camp.

Drift, located near Union No. 1, owned by the same company. Suspended on same date, and in hands of the same receiver.

SMALL MINES EMPLOYING LESS THAN TEN MEN—(Working No. 7 Coal).

Burris.

Drift, operated by Jas. Burris, Cambridge, O., employing from 3 to 7 men.

Wild Cat.

Drift, operated by Jas. Stoner, Cambridge, O. Employs from 2 to 5 men.

May Flower.

Drift, operated by Alex. Todd, Cambridge, O.

Black Berry.

Drift, operated by Geo. Gorley and Leslie Smith, both of Cambridge, O.

Whiten.

Drift, operated by John Lloyd, Cambridge, O. Employs 2 men.

Briar Hill.

Drift, owned by Nicholson heirs. Wm. Nicholson, administrator, Cambridge, O. Operated by Elmer Wharton and David McConnell, lessees, both of Cambridge, O. Employs from 3 to 5 men.

Sugar Tree.

Drift, operated by Gable & Frame, Byesville, O. Employs 3 men.

Jones.

Drift, operated by Wm. Jones, Kimbolton, employing from 3 to 5 men.
6 coal seam.

**SMALL MINES EMPLOYING LESS THAN TEN MEN, LOCATED NEAR
QUAKER CITY, O.—(Working No. 8 Coal, which is four feet thick.)****Keenan.**

Operated by C. E. Keenan, Quaker City, O.

Carter.

Operated by J. B. Carter, Quaker City, O.

Holensworth.

Operated by Dr. Holensworth, Quaker City, O.

B. L. Galloway.

Operated by B. L. Galloway, Quaker City, O.

E. B. Galloway.

Operated by E. B. Galloway, Quaker City, O.

Webster No. 1.

Operated by Waldo Webster, Quaker City, O.

Webster No. 2.

Operated by Clyde Hays, Quaker City, O.

Montgomery.

Operated by J. W. Montgomery, Quaker City, O.

Sayer.

Operated by Samuel Sayer, Quaker City, O.

Hall.

Operated by Jabo Cleary, Quaker City, O.

McCormick.

Operated by Clarence McCormick, Quaker City, O.

Spencer.

Operated by Richard Spencer, Quaker City, O.

Bates.

Operated by Richard Bates, Quaker City, O.

NOBLE COUNTY.**Laura.**

Shaft, 185 feet deep, located on the Pennsylvania R. R. near Coal Ridge, O. Operated by the Belle Valley Coal Co., Cambridge, O. T. E. Richards, same place, superintendent; W. J. Metheney, mine foreman, Belle Valley, O. Fan ventilation, modern electric equipments; employs 198 miners and 57 day men. January 6th, found in good condition. February 10th, entries only were being worked. Conditions were approved. April 23rd, twelve rooms, in addition to the entries, were being worked. July 2nd, secured map of oil well passing through this coal territory. August 24th, investigated the death of Michael Tragow, who lost his life by stepping in front of a moving motor. Examined the mine, ordering shields placed on the off-side of the Jeffrey machines; the near-side only was shielded. August 31st, shields were provided as ordered. September 22nd, was assisted in this inspection by Isaac Hill, inspector of the Fourth District; ordered two boys removed from the mine, who were under 15 years of age, the district school having commenced a few days prior to this inspection. December 2nd, 3rd and 4th and main west entries were piercing faults for the purpose of developing coal field beyond, which had been tested by drilling and proved satisfactory. Would recommend an additional escape-way provided as soon as the new territory is developed sufficiently to properly locate one.

Imperial No. 3.

Shaft, 189 feet deep, formerly reported as Noble. Located on the Pennsylvania R. R. near Belle Valley, O. Operated by the O'Gara Coal Co., Chicago, Ill. James Orr, superintendent, Byesville, O.; J. A. Collins, mine foreman, Belle Valley, O. Fan ventilation, modern electric equipments, employs 121 miners and 56 day men. Suspended operation March 31, 1908, and was still idle when visited on March 27th of this year. Posted new laws and rules, requesting management to conform to them prior to resuming work. Being duly notified that operation would resume on May 10th, visited and found machines not equipped with shields; ordered mine boss to cease operating until the shields were provided. July 21st, found shields and copper blasting tools in general use. Ordered rules regarding wiring more strictly observed, and safety holes made opposite all wires along the motor lines. October 4th, previous orders had been complied with and conditions approved. December 15th, three violations of the law regulating breakthroughs were found. The mine boss stopped all these places until they could be provided with breakthroughs.

Golden Rod.

Shaft, 195 feet deep, located on the Pennsylvania R. R. near Coal Ridge, O. Operated by the Guernsey Coal & Mining Co., Newark, O. Chas. Haskins, manager, Byesville, O. Fan ventilation, electric equipments; 46 miners and 13 day men are employed. February 10th, the second opening lacked 17 feet of being connected. The mine was idle, as ordered December 30th of the previous year, until the second opening could be finished. Ordered mine examined with a safety lamp on all occasions before entering any section with an open light, and a cage trap provided at the ground landing. Earnest Brooker was manager at that time. March 25th, escape shaft was completed and stairs being erected. A resumption of work was permitted with the understanding that the hoisting apparatus be kept in gear at the second opening, until the stairs could be completed. June 21st, tested scales; ordered a turnbuckle placed on a long connecting rod to adjust contraction and expansion of said rod; two doors hung in the mine, also copper blasting tools secured not later than July 1st. T. J. Spencer had succeeded E. R. Brooker as manager. August 31st, finding ventilation deficient on 3rd and 4th west entries, the boss removed the men until a door could be erected; there being only one shield on the machine, he also stopped it until the other shield could be provided; requested guard rails placed around the machinery in the power house, hand rails placed along the stairs leading up to the weigh house, and a shelter erected over the escape shaft. November 22nd, all previous requests had been complied with, excepting the shelter over the manway. December 8th, Chas. Haskins had assumed the duties of manager, and is making an effort to evade the faults that have given considerable annoyance and secure good coal if possible. Advised the stable to be erected, made of non-combustible material, and located a distance away from both entries leading to both escape ways.

MINES WORKING No. 8 COAL, WHICH IS 4 FEET THICK AT THIS POINT.**Coal Run.**

Drift, located on the O. R. & W. R. R. near Hirambsburg, O. Operated by the Coal Run Coal Co., Akron, O. Robt. Alton, manager, Hirambsburg, O. Furnace ventilation, pick mining, mule haulage, employing 10 miners and 2 day men. April 6th, violations of the law governing breakthroughs were found; the boss promptly stopped the places until the law could be complied with. Ordered furnace erected; natural ventilation was proving unreliable. October 28th, furnace was in operation and ventilation commendable, but the stack became ignited and burned down. The burning of the stack caused the surrounding woods to take fire, which being the lowest point of the mine, the air current reversed, and carried the smoke in the mine, forcing us to gather the men together and make a hasty retreat out through the main opening to safety. Ordered furnace rebuilt before operation resumed.

Marion.

Slope, 75 feet long, situated on the O. R. & W. R. R. near Steam Town Station. Operated by the Marion Coal Co., Whigville, O. J. W. Young, manager, Sarahsville, O. Furnace ventilation, pick mining, mule and cable haul-

age. Employs 10 miners and 2 day men. May 12th, owing to a disagreement between employer and employes, the mine was idle, with no representative present. On entering the mine, found a mule stable had been erected on the side of the main entry on the inlet of the air. As it was not only unsanitary, but a fire-trap as well, ordered it removed, and a map of the mine prepared and filed. August 24th, the stable was found outside the mine, and the survey had been made. Conditions approved. October 19th, investigated the accidental death of John W. Vandyne, who was killed by a treacherous slip at the face of his well-posted room. Examined the mine, recommending that heavier pillars be left between the rooms being worked from the main west entries, as a protection against creep on the main entrance to the coal field. Mr. Young informed me that he had ordered a fan and would have it in operation upon my return.

SIXTH DISTRICT

ALEX. SMITH.

COMPOSED OF THE COUNTIES OF COSHOCTON, COLUMBIANA AND
TUSCARAWAS.

Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio:

Dear Sir:—Conforming to a long established custom of the mining department, I herewith submit for your approval, my annual report.

This report covers the period from January 1, 1909, to December 31, 1909, both dates inclusive, and the counties of Tuscarawas, Columbiana and Coshocton.

During the period covered by this report, 265 visits were made; 33 permanent improvements are recorded, consisting of 10 furnaces, 2 fans, 13 air shafts, 7 second openings and 1 ventilating basket; 11 pairs of scales were tested, all of which were found correct; there were 3 new mines opened, 1 suspended, and 6 abandoned.

I very much regret to record 13 fatal accidents in my district for the year (6 of which occurred in the month of December alone), 7 in Tuscarawas, 5 in Columbiana and 1 in Coshocton county. Eight were killed by falls of stone, two by an explosion, one was crushed by cars, one struck by a rock at the tipple, and one found dead in a sump at the bottom of a shaft.

Conditions of Employment.

Work throughout the district during the year was very poor; several mines added operation for months, thereby overcrowding the mines which continued in operation, most of which worked but two or three days a week. This work in mines is very detrimental to the miner, as well as operator; the miner suffering both in wages and conditions, while the operator is obliged to keep his mine in as good condition as possible to meet conditions as they present themselves; thus it is that we usually find the mine which is working steadily in much better condition than the mine working only half time.

Operation of New Legislation.

Owing to the poor work in the mines for the last two years, it has made the new laws rather slow of application, but we are pleased to note that while the process has been slow, both miners and operators are generally complying, in consequence of which the mines, in a general way, are improving in condition constantly. The law governing electricity has already brought good results, which are noticeable in almost every mine equipped with electricity. Shields on cutting machines, to which there was so much objection made by machine cutters, are now found on all machines. Copper needles and tampers, which were also seriously objected to, are found well provided. Owing to a scarcity of work, miners were not in a position to purchase these tools, and the inspector was subjected to the trying ordeal of using his judgment as to the most opportune time to demand their purchase, but the law regulating and governing the use of powder, boxing of same, and tamping of holes, has not been so well observed, and while the tamping of holes as provided by law, by many miners of today is laughed at and scorned, does not nevertheless prove that the law is not a beneficial one, and the miner who tamps his hole with dust or dry coal (which rather aids combustion than offers resistance to his shot), is the man who often pays dearly for his conduct by working off standing shots. All other things being equal, the well tamped hole is the best safeguard against a blown-out shot, and I hope the day is not far distant when miners will exercise more care in the use of powder and the tamping of holes.

The method of producing coal by solid shooting is in use in a great many mines in my district, and the system is becoming a very dangerous one for

several reasons, namely: From the fact that shots in many cases are not properly prepared; no undercutting or shearing being done and, in many cases, holes are drilled 10 and 12 feet deep, into which powder is placed without restraint, and only lightly tamped with dry material; and, in some cases, with dummy cartridges filled with drill dust, simply intensifying the flame from the shot and adding to the danger already existing. I have cautioned both miner and management against such practices wherever solid shooting is practiced, and I hope that a remedy may soon be found to correct this growing evil. There is no doubt but that the Mining Commission appointed to make recommendations to the legislature, composed of men of wide experience in mining matters, will recommend many remedies for present evils found in the mines.

In conclusion, permit me to say that my relations with both miners and operators have been of the most pleasant character, and I very much appreciate the courtesies of the department and extend to you thanks for your assistance and advice at all times.

Respectfully submitted,

ALEX. SMITH,

150 West Minnich Ave., New Philadelphia, O.

December 31, 1909.

Inspector Sixth District.

COLUMBIANA COUNTY.

Garside.

Located two miles northeast of Salineville; transportation C. & P. R. R. Owned and operated by the Big Vein Coal Co., Cleveland, Ohio. E. G. Marshall, superintendent. Thos. Thomas, mine boss. Both of Salineville, Ohio. Shaft, 200 feet deep, coal $5\frac{1}{2}$ feet thick; 125 miners and 50 day men employed. All coal is mined by Jeffrey machines. Four inspections made: February 4th, mine in fair condition, with air much improved over previous visit. A 20-foot Brazil fan was found in operation, giving good results. Motor haulage had just been installed, and wiring was approved, except one cross-over, which was ordered protected. Gas was found in one place, which on that account had been stopped until a breakthrough could be made. Safety catches were tested and found satisfactory. March 15th, visited to ascertain the distances certain entries were in proximity to the water in the old mine. According to map and measurements, there was 512 feet of solid coal between the 19th and 21st entries and water, and the 7th and 9th south face were protected by 20 feet, hence the mine was considered safe for the present. The date of map extension from which measurements were taken was December, 1908. June 23rd, again inspected and found in fair condition on the west side, but a squeeze was working over the east side and no work was being done. Safety catches were tested at both shafts and found satisfactory at No. 2, but failed to act at No. 1. and were ordered repaired immediately. October 19th, found mine in fair condition for the possibilities to be met, and as a large body of water lies against this mine, advised that surveys be made every three or four months. No gas was found on this visit.

NOTE—Since my last visit in October, I am informed the mine is under new management, with Mr. T. R. Lewis as superintendent, taking charge November 1st, and John Brady, mine boss, December 1st.

Strabley.

Located at Salineville, on C. & P. R. R. Operated by the Strabley Mining Co., Salineville, Ohio. J. S. Strabley, superintendent and mine boss. Drift opening to No. 7 seam, 5 feet thick; fan ventilation, machine mining and motor haulage; 40 miners and 10 day men employed. Four visits made: February 3rd, mine in fair condition, except manholes, which were ordered made on motor road. June 25th, mine in fair condition. October 20th, found in unsatisfactory condition, on account of air not being well directed; orders were given to immediately remedy this condition by building stoppings and closing breakthroughs. November 29th, scales tested, which, while somewhat slow to respond, were found correct.

Old Slope.

Located at Salineville, on C. & P. R. R. Operated by the Ohio & Pennsylvania Coal Co., Cleveland, Ohio. This mine has been under various managements during the year. At present it is under the management of Jos. Nelms, as superintendent, and Wm. Beynon, mine boss, both of Salineville, Ohio. Slope opening, No. 7 seam, $4\frac{1}{2}$ to $5\frac{1}{2}$ feet high. Machine mining, motor and mule haulage; 70 miners and 30 day hands employed. Three visits made: February 2nd, June 24th and November 30th. On the two former visits the mine was found in fair condition; on last visit, found the inner solid workings

abandoned, and all work the robbing of pillars begun. As this is very dangerous work, especially where so many men are employed at work of this nature, ordered the utmost caution used. Also found the new management in charge.

New Slope.

This mine was abandoned early in the year; was located on the C. & P. R. R., near Salineville, and operated by Maher, Bettis & Co.

State Line No. 3.

Located at East Palestine, Ohio, on P. Ft. W. & C. R. R. Operated by the National Fireproofing Co., Pittsburg, Pa. W. F. Kocher, superintendent. Chas. Jones, mine boss. Both of East Palestine. Drift opening to No. 7 seam of coal, $2\frac{1}{2}$ feet thick; clay beneath coal, seam $3\frac{1}{2}$ to 4 feet thick, is worked in connection with coal. Fan ventilation; rope and mule haulage; 16 miners and 8 day men employed. Two visits made. May 5th and October 6th; on each visit conditions were approved.

Beech Grove.

Located on C. & P. R. R., at Salisbury. Operated by the Buckeye Clay & Coal Co., East Liverpool, Ohio. John P. Jones, superintendent and mine boss. Slope opening, to No. 3 seam, $3\frac{1}{2}$ feet thick. Fan ventilation; pick and machine mining; rope and mule haulage; 38 miners and 13 day men employed. This mine lost a great deal of time during the year, and is under new management. Only one visit made, June 22nd, when mine was found in fair condition, except a squeeze on 6th right entry, which was giving the management some trouble. Mine was idle on this visit, but air found in fair circulation.

Big Walnut.

Located about two miles west of Washingtonville, on the Y. & O. R. R. Operated by Card & Prosser Coal Co., Cleveland, Ohio. Thos. Prosser, Lisbon, Ohio, superintendent. J. F. Waters, Washingtonville, Ohio, mine boss. Slope opening, 200 feet long, to No. 3 seam, 3 feet 3 inches thick; fan ventilation; rope and mule haulage; single entry system; pick mining, solid shooting; 52 miners and 14 day hands employed. Five visits made. Suspended from January 19th to June 5th, owing to a controversy between company and miners in regard to shot firers and trip riders. February 16th, found mine idle, for causes given above. March 22nd, visited at the request of Chief Inspector Harrison, in company with President Tetlow, of the 4th Sub-District, and members of the company, for the purpose of reaching, if possible, some agreement and to start the mine. August 23rd, found in fair condition, with roads sprinkled and dampened. September 9th, visited in company with officers of the U. M. W. of A., members of the coal company, and Inspectors Miller, of Massillon, and Morrison, of Sherodsville, to ascertain whether similar conditions existed at other mines in the same vicinity. A detailed report was made by Inspectors Miller, Morrison and myself, and will be found elsewhere in this report. December 21st, mine found in fair condition, excepting dust in 1st and 2nd cross-cuts and on 8th entry, which was ordered sprinkled and loaded out of both entries and room necks, and men were admonished to prepare their shots by undercutting. The system of preparing coal in this mine is very dangerous as at present practiced, and the very dry nature of the coal, which is brittle in its nature, creates a

large amount of dust, which only adds to the danger, making coal mining in this vicinity under present conditions very dangerous.

Klondyke.

Located at Lisbon on the Erie R. R. Operated by the Card & Prosser Coal Co., Cleveland, Ohio. Thos. Prosser, Lisbon, Ohio, superintendent. Jas. Broadbent, same place, mine boss. Drift, to No. 6 seam, 2 feet thick; single entry system; electric machine mining; motor and mule haulage; fan ventilation. Two visits made: March 25th and August 25th. On former visit found in fair condition; on last visit found mine in very poor condition. It seemed to me the air had had little attention from the management, as doors and air courses were found in very poor condition. Orders were given to improve ventilation immediately. Employs 26 miners and 7 day men.

West Pittsburg.

Located five miles north of Lisbon, on the Erie R. R. Operated by the Card & Prosser Coal Co., Cleveland, Ohio. Thos. Prosser, Lisbon, Ohio, superintendent. A. T. Davis, Franklin Square, mine boss. Shaft opening, 157 feet deep, to No. 3 seam, $3\frac{1}{2}$ feet thick; fan ventilation, electric machine mining, mule haulage; 55 miners and 15 day men employed. This mine has been very expensive to operate, owing to the vast amount of water to be handled. March 23rd, in fair condition; safety catches on cages failed to work, and was compelled to stop men from being lowered or hoisted until they were repaired, causing a few days cessation. August 24th, found mine in very poor condition; water was pouring into it from all directions. While still at the mine, orders came from the company at Cleveland to abandon the mine, which was done as soon as iron and pumps could be taken out, and has been abandoned since August 25th.

Salem.

Located three miles east of Salem, on the Y. & O. R. R. Operated by the Salem Company, Salem, Ohio. Wm. Dunn, same place, superintendent. Thos. McCallum, Washingtonville, Ohio, mine boss. Drift opening, to No. 3 seam, $3\frac{1}{2}$ feet thick; electric machine mining; motor and mule haulage; fan ventilation; single entry system; 48 miners and 18 day men employed. Four visits made: January 22nd, investigated fatal accident to Don Campbell, 26 years of age, who met his death by fall of stone at the mouth of No. 6 west Butt entry. On February 17th, May 25th and October 4th, found in fair condition.

Fairfield No. 2.

Located at New Waterford, on P. Ft. W. & C. R. R. Operated by the Fairfield Coal Co., Cleveland, Ohio. John Moon, superintendent. Wm. Shasteen, mine boss. Both of New Waterford, Ohio. Drift opening, to No. 6 seam, 3 feet thick; fan ventilation; rope haulage; single entry system; pick mining. Visited May 6th, and found the mine was being fast worked out, most work consisting of robbing pillars. Was shortly afterwards abandoned. Employs 44 miners and 19 day men.

Fairfield No. 3.

Located near No. 2, coal being delivered to same tippie, and is under same management. Cable and mule haulage; pick mining; single entry system; fur-

nace ventilation. Was visited May 6th and October 8th; 118 miners and 21 day men employed. On last visit found a new second opening made and in good condition. Conditions approved on each visit.

State Line No. 1.

Located at East Palestine, Ohio, on the P. Ft. W. & C. R. R. Operated by the State Line Coal Co., Cleveland, Ohio. Hugh Laughlin, superintendent. Geo. Sutherin, mine boss. -Both of East Palestine, Ohio. Employs 185 miners and 29 day men. As only about 1,800 feet from tippie is in Ohio, inspected that part very carefully, and found everything in good condition, except one cross-timber on main haulway, which was ordered renewed immediately. Rope haulage, pick mining and fan ventilation.

Prospect Hill No. 1.

Located at East Palestine, on P. Ft. W. & C. R. R. Operated by the Prospect Hill Coal Co., East Palestine, Ohio. Grant Hill, superintendent. Thos. Stackhouse, mine boss. Both of East Palestine, Ohio. Slope opening, to No. 6 seam, 3 feet thick; mined by compressed air machines; fan ventilation, rope haulage, single entry system; 50 miners and 10 day men employed. Suspended from August, 1908, to June, 1909, a period of about 10 months. One visit made: October 7th. Mine in fair condition; 3rd right entry is being driven in the direction of old works filled with water. One hole was being drilled ahead for safety, but ordered if entry was driven any further that three holes must be kept drilled ahead.

Prospect Hill No. 2.

Located two miles west of East Palestine, on the P. Ft. W. & C. R. R. Operated by same company as No. 1. Grant Hill, superintendent. James Fleming, mine boss. Both of East Palestine, Ohio. Drift opening, to No. 6 seam, 3½ feet thick. Furnace ventilation; mule haulage; pick mining; single entry system; 27 miners and 5 day men employed. Owing to this mine (like No. 1) being suspended for about ten months, only one visit was made. December 1st, in fair condition, considering the faulty condition of the mine.

Delmore.

Located about 1½ mile southwest of Leetonia, on the Erie R. R. Operated by the Delmore Coal Co., Leetonia, Ohio. H. D. Hileman, Cleveland, Ohio, superintendent. Daniel McGrath, Leetonia, mine boss. Slope opening, 360 feet long, to No. 3 seam, 3 feet 3 inches thick; fan ventilation, rope and mule haulage; single entry system; pick mining (solid shooting). Employs 38 miners and 9 day men. Five visits made: June 4th, in good condition, excepting a quantity of dust was found in 3rd right entry, and ordered removed immediately. Old tamping (iron) tools were ordered from the mine. On September 10th, accompanied by officers of the U. M. W. of A., representatives of the Big Walnut mine, and Inspectors Miller, of Massillon, and Morrison, of Sherodsville, visited this mine, to ascertain the comparative conditions existing between the Big Walnut and McNab mines, a detailed report of which will be found elsewhere. December 18th, visited this mine in company with Inspector Morrison, of the 9th district, to investigate the cause of the explosion and fatal accident to Wm. Keen and Geo. Greenwalt, two shot firers, who lost their lives as a result of the explosion on the 16th. December 20th, again visited the mine in company with

Chief Inspector Harrison, Inspector Morrison, and representatives of the company, and also on December 27th, in company with Chief Inspector Harrison, District Inspector Morrison, Sub-District President Tetlow, and the mine boss and fire boss of the mine. We were able to make a thorough inspection of the mine, which we did, a detailed joint report of which will be found elsewhere. Owing to the system of producing coal in this and adjacent mines, a dangerous condition has been created, which if persisted in may cause a catastrophe at any time. The following orders were issued:

That all dust must be cleaned from the mine, and entries and room necks sprinkled.

That all shots made should at least be undercut one-half.

That no hole should be drilled past cutting or shearing.

That no dummy cartridges should be filled with drill dust, but such material as provided by law.

These were temporary orders given until a joint report could be made and permission given to operate the mine as soon as it was cleaned up and in proper condition.

McNab.

Located near Salem, and operated by the Buck Coal Co., Pittsburg, Pa. Shaft opening, to No. 3 seam, 250 feet deep, coal 3 feet thick; exhaust steam is used to ventilate. Pick mining, solid blasting, single entry. The management at this mine was changed early in the year. Grant Hill, East Palestine, superintendent, and Michael Flinn, Salem, Ohio, mine boss. Six visits made: February 15th, found idle, but orders given on previous visit had been carried out. May 24th, mine found in fair condition, excepting dust which was found on 2nd right entry and ordered removed. Safety catches tested. As the east cage would not hold, ordered same put in condition. July 9th, found the mine in very fair condition, but east cage not yet repaired; tested scales and found correct. September 9th, visited mine to compare conditions with Big Walnut and Delmore mines. September 24th, visited mine to investigate cause of fatal accident to Leon Fredric, who was found dead in the sump at bottom of shaft. December 22nd, mine found in fair condition, except quantities of dust were found in some of the entries, which was ordered sprinkled and removed. Men were admonished to undercut coal in preparing their shots and to use the utmost caution. Employs 28 miners and 11 day men.

Neiheisel.

Located near Leetonia, Ohio. Operated by the Neiheisel Coal Co., Leetonia, Ohio. Fred J. Neiheisel, superintendent. Henry Walzer, mine boss. Both of Leetonia. Slope opening, 300 feet, to No. 3 seam, 3 feet thick; fan ventilation; rope and mule haulage; 6 miners and 2 day men employed. Two visits made: February 19th and December 3rd, and conditions approved.

Newhouse.

Located at New House. Operated by the Herriott Coal Co., Lisbon, Ohio. C. C. Herriott, Lisbon, Ohio, superintendent and mine boss. Transportation on the P. L. & W. R. R. Drift opening, to No. 6 seam, 3 feet thick; motor haulage; electric machine mining; furnace ventilation; single entry system; 38 miners and 10 day men employed. Two visits: June 3rd and December 2nd. On former visit, mine found in reasonably fair condition. On last visit, mine found in poor

condition; air was escaping at almost every door; doors on both entries and rooms were found in very poor condition. Orders were given to repair doors immediately and improve ventilation.

Pleasant Valley No. 6.

Located at Negley, Ohio, on the P. L. & W. R. R. Operated by the Negley Coal Co., Negley, Ohio. P. H. Murphy, same place, manager. Drift, to No. 6 seam, 3 feet thick; pick mining, mule haulage, furnace ventilation, single entry system; 14 miners and 4 day men employed. Two visits made. March 24th and October 5th. On each visit found air only in poor condition; orders were given to repair doors and improve ventilation immediately.

Pleasant Valley No. 7.

Located near No. 6. Operated by same company. Coal goes to same tippie. Drift opening, to No. 7 seam, 3 feet thick; natural ventilation. Two visits made: March 24th and October 5th. Work consists only of robbing pillars. On first visit, found 5 miners and 1 day man employed; on last visit only 2 miners and 1 day man employed. Conditions fair.

Wheat Hill.

Located at East Palestine, Ohio. Operated by the Wheat Hill Coal Co., East Palestine, Ohio. Jas. Fleming, same place, manager. Drift, to No. 7 seam, $2\frac{1}{2}$ feet thick; fan ventilation; pick mining; mule haulage; single entry system; 10 miners and 3 day men employed. One visit made, May 4th. Dangerous stone was found on right hand entry; orders were given to make this safe, which the management promised to do at once.

Average.

Located at Washingtonville. Operated by Jno. D. Smith, of same place, who is also manager. Slope opening, to No. 4 seam, $2\frac{1}{2}$ feet thick; fan ventilation, rope and mule haulage; pick mining; single entry system. One visit made, February 16th, and conditions approved. Employs 9 miners and 2 day men.

West Point.

Located at West Point, on the Y. & O. R. R. Operated by the West Point Coal & Coke Co., East Liverpool, Ohio. J. L. Frances, West Point, Ohio, superintendent. Wm. S. Risher, Wellsville, Ohio, mine boss. Drift opening, to No. 6 seam, $4\frac{1}{2}$ feet thick; furnace ventilation; single entry system: pick mining; 8 miners and 2 day men employed. Two visits made: June 2nd, ordered a furnace and stack erected to assist circulation. On my second visit, August 26th, found previous orders carried out and mine in good condition.

Georgetown.

Located at Georgetown. Operated by Edw. Reichenbach, who is also manager, North Georgetown, Ohio. Clayton DeJane, mine boss. Shaft, 60 feet, to No. 3 seam, 3 feet thick; pick mining; natural ventilation; single entry system; 6 miners and 3 day men employed. One visit made, October 18th. Mine found in poor condition; orders were given to improve conditions at once.

Crook.

Located near Fairfield mine No. 3, at New Waterford, Ohio. G. W. Crook, owner and manager. Slope opening, to No. 6 seam, 3 feet thick; furnace ventilation; 5 miners and 2 day men employed. One visit made, October 8th, and conditions approved.

Hoon.

Located at East Palestine, Ohio. Operated by the Hoon Coal Co., John Jones, Sr., manager. Drift, to No. 7 seam, 2 feet 8 inches thick; furnace ventilation. One visit made, May 4th, and conditions approved; 3 miners employed.

Andelusia.

Located about 2 miles north of Salem, Ohio. Operated by Jesse Shepard. Shaft, 60 feet, to No. 3 seam, 3 feet thick. Exhaust steam is used to ventilate mine; 8 miners and 1 day man employed. Visited February 18th; found idle; no air in circulation and no inspection made.

Beech Hollow.

Located about two miles northwest of Salem, Ohio. Operated by Reese Bros., Salem, Ohio. Thos. G. Reese, manager. Drift, to No. 3 seam, 3 feet thick. Visited February 18th and conditions approved. Employs 5 miners and 1 day man.

Stackhouse.

Located $3\frac{1}{2}$ miles from East Rochester, Ohio. Visited this country mine December 23rd, to investigate the cause of fatal accident to Thos. Lucas, whose death occurred December 13th, from a fall of stone. Only two men were working in the mine, robbing pillars.

Oak Hill Clay.

Located at Washingtonville, Ohio, on the Y. & O. R. R. Operated by the Columbia Fire Clay Co., Cleveland, Ohio. I. N. Russell, Salem, Ohio, manager. Slope opening, 225 feet, to No. 3 seam of clay, 6 feet thick; furnace ventilation; mule and rope haulage; 7 miners and 6 day men employed. Visited February 16th, found in fair condition.

Negley Clay.

Located at Negley, Ohio, on P. L. & W. R. R. Operated by the Negley Clay Co., Negley, Ohio. F. I. Powers, superintendent. Jas. Sutherin, mine boss. Both of Negley, Ohio. Drift opening, to No. 3 seam of clay, 8 feet thick; 9 miners employed. A new furnace, which was ordered on last visit, was found completed. Two visits made: March 24th and October 5th. Mine found in fair condition, except some men were working far in advance of air, not having made breakthroughs at the proper place. Ordered breakthroughs made at once or men stopped.

Card & Prosser Clay.

Located at Lisbon, on the Erie R. R. Operated by Card & Prosser Coal Co., Cleveland, Ohio. Shaft opening, to No. 3 seam of clay, 6 feet thick; exhaust

steam ventilation; mule haulage; solid blasting; 10 miners and 2 day men employed. Two visits made: March 25th and August 25th; on each visit found mine in fair condition.

Walker Clay.

Located near Lisbon, Ohio. Operated by American Sewer Pipe Co., Akron, Ohio. Geo. Freeman, superintendent. Chas. McCaskey, mine boss. Both of Lisbon, Ohio. Drift opening; 5 miners and 2 day men employed. One visit made, June 3rd, and condition approved.

Champion Clay.

Located near Wellsville, Ohio, on C. & P. R. R. Operated by the Champion Brick Co., Wellsville, Ohio. C. R. McDaniel, East Liverpool, Ohio, manager. Drift opening, natural ventilation; only 2 miners employed. This mine has just passed through a fault and was ahead of air. The company was ordered to employ no more men until air was put in condition. Visited August 27th.

Colonial Clay.

Located at New Salisbury, on C. & P. R. R. Operated by the Colonial Coal & Clay Co., Pittsburg, Pa. Harry R. Lloyd, superintendent. Wm. Davis, mine boss. Both of Irondale, Ohio. Shaft, 90 feet deep; fan ventilation; 6 miners and 1 day man employed. One visit made, June 22nd; orders were given to safeguard the sump at bottom of shaft; safety catches tested and found correct.

Buckeye Clay.

Located at Wellsville, Ohio., on C. & P. R. R. Operated by the McLain Fire Brick Co., Pittsburg, Pa. H. H. Hine, superintendent. J. R. Filkes, mine boss. Both of Wellsville, Ohio. Drift opening, natural ventilation; 7 miners and 1 day man employed. One visit made, August 26th; mine in fair condition. Suggested the building of a furnace to improve the air.

Vulcan Clay.

Located at Wellsville, on C. & P. R. R. Operated by the Vulcan Clay & Brick Co., Wellsville, Ohio. Julius A. Cohn, superintendent. Harry Gettings, mine boss. Both of Wellsville, Ohio. Drift opening, natural ventilation. Clay in this mine is about 12 feet thick. Visited August 26th. Mine in fair condition, except some timbers on main haulway, which were ordered changed and made safe. Employs 4 miners and 1 day man.

COSHOCTON COUNTY.

Franklin No. 1.

Located on switch of Panhandle R. R., near Franklin Station. Operated by the Columbus Coal & Mining Co., Coshocton, Ohio. R. N. Barnes, superintendent. J. S. Kitchen, mine boss. Both of Coshocton, Ohio. Drift opening, to No. 6 seam; furnace ventilation; pick mining; mule haulage. Three visits made:

January 20th, July 1st and October 26th. The only work was the robbing of pillars, except on last visit found 6 men working in rooms on 1st east entry; 8 miners and 1 day man employed.

Franklin No. 2.

Located same as No. 1, under same management. Coal goes to same tippie. Furnace ventilation; drift opening, to No. 6 seam, 3 feet 8 inches thick; 26 miners and 7 day men employed. Three visits made: January 20th, July 1st and October 26th. On each visit found in fair condition.

Franklin No. 3.

Located opposite No. 1. Owned and operated by same company and under same management. Coal is dumped at same tippie. Drift opening, to No. 6 seam, 3 feet thick; furnace, single entry system and mule haulage; 16 miners and 5 day men employed. Three visits made: January 20th, July 1st and October 26th. On each visit found in fair condition.

Barnes No. 1.

Owned and operated by the Barnes Coal & Mining Co., Coshocton, Ohio. R. N. Barnes, superintendent. John Ford, mine boss. Drift, located on W. & L. E. R. R., near Conesville, Ohio. Fan ventilation, electric machine mining and mule haulage. No. 6 seam, 4½ feet thick. Two visits made, April 14th and October 27th, and found in reasonably fair condition. This mine was suspended for about three months during the summer; 53 miners and 16 day men employed.

Barnes No. 2.

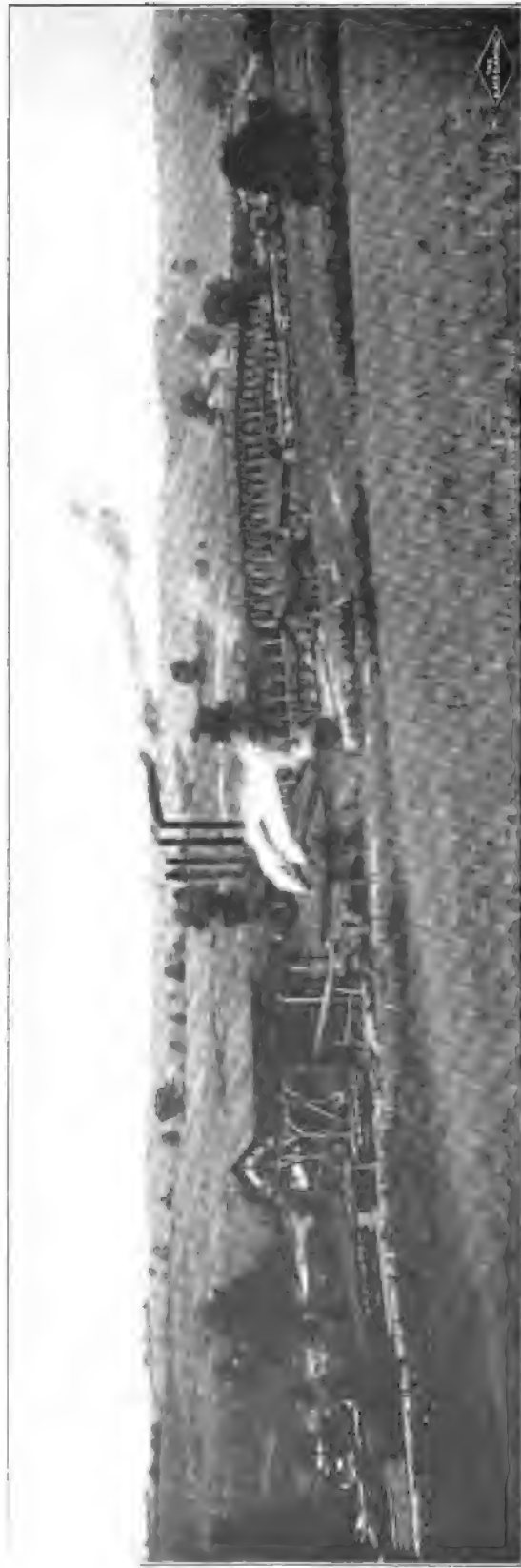
Located on the W. & L. E. R. R., about 1½ miles from Conesville, Ohio. Operated by the Barnes Coal & Mining Co., Coshocton, Ohio. C. C. Hudson, same place, superintendent and mine boss. Drift opening, to No. 6 seam, 4 feet thick; fan ventilation, electric machine mining, motor and mule haulage. Two visits made, April 14th and August 18th. On first visit ordered wiring put in better condition. On second visit found the air almost cut off by water; ordered the 5th west entry driven night and day until it was driven through, in order to shorten the travel of air and cut off the water; 53 miners and 16 day men employed.

Conesville No. 1.

Owned and operated by David Davis, Conesville, Ohio. J. G. Davis, superintendent. Drift opening, to No. 6 seam; pick mining. One visit made, June 30th; found the mine suspended indefinitely.

Conesville No. 2.

Located near Conesville, on the Panhandle R. R. Operated by David Davis, Conesville, Ohio, who is superintendent. Richard Holdsworth, mine boss. Drift opening, to No. 6 seam, 4 feet thick; compressed air machine mining; furnace ventilation; single entry system; 5 miners and 3 day men employed. Visited June 5th and found idle.



TIPPLE AND APPROACHES OF THE WARWICK COAL COMPANY, COSHOCTON, OHIO.

Conesville No. 4.

Owned and operated by David Davis, Conesville, Ohio. Located about one mile from Conesville on a branch of the Panhandle R. R. David Davis, superintendent, J. F. Murphy, mine boss. Slope opening to No. 6 seam, $3\frac{1}{2}$ feet thick; fan ventilation, compressed air machine mining; 55 miners and 12 day men employed. Two visits made: January 21st and June 30th; conditions fair.

Wade No. 2.

Located on the W. & L. E. R. R., about 3 miles from Coshocton, Ohio. Owned and operated by the Wade Coal Co., Cleveland, Ohio. Jas. Perkins, Coshocton, manager. Drift opening, to No. 6 seam, 3 feet thick; pick mining; mule haulage; 26 miners and 12 day men employed. Two visits made, April 13th and October 28th; conditions fair.

Wade No. 3.

Owned and operated by same company as No. 2, and under the same management. Drift opening, to No. 6 seam, $3\frac{1}{2}$ feet thick; furnace ventilation, mule haulage, pick mining. Two visits made. April 13th, found mine being rapidly exhausted; only 3 miners and 3 day men employed. On second visit found mine abandoned.

Oden Valley No. 2.

Located on branch of Panhandle R. R., two miles from Conesville, Ohio. Operated by the Oden Valley Coal Co., Coshocton, Ohio. G. W. Cassingham, superintendent. Jas. Ford, mine boss. Both of Coshocton, Ohio. Drift opening, to No. 6 seam, $3\frac{1}{2}$ feet thick; furnace ventilation; mule haulage; pick mining. Two visits made, April 15th and August 17th. On each visit the air was found in poor circulation and a new furnace was suggested; orders were given to improve ventilation.

Plant of the Warwick Coal Co.

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The new plant of the Warwick Coal Co., a few miles from the town of Coshocton, is one of the most modern and well-planned in the Middle District of Ohio. As indicated in the Journal of July 21, a complimentary trip to this plant was given about 60 retailers by the Drake Coal Co., with which the Warwick Coal Co. is associated, and on Thursday of last week about 15 more were taken down to inspect it. The men interested in the several associated companies have been engaged in producing and marketing Massillon and Coshocton coal for 25 years, and they appreciate the importance of securing property containing a seam of coal of exceptional domestic quality and equipping it in such a manner as to insure both ideal preparation and large tonnage capacity at a minimum cost of production.

The plant shown in the engraving serves two openings. The No. 4 is a slope with a grade of $2\frac{1}{2}$ per cent. for 900 feet, opposed to loads. The tract of land contains 450 acres, and this slope penetrates the center. In order that the workings might be so planned as to obviate grades opposed to loads, 35 drill

holes were put down and levels were accurately run over the field before the opening was begun. Natural drainage has been obtained for this mine by carrying a 24-inch sewer pipe to the lowest point in the territory, as shown by the drill holes and levels. The expense of maintaining pumps will thus be done away with and the employees will be enabled to load and clean dry coal. From the standpoint of economy, this is one of the important points made by the company, as the passage of dry coal over the screens insures the elimination of dust, fine coal and other impurities at the tippie.

The No. 5 opening was located after tests had been made, similar to those of the No. 4. This opening will serve a territory of 640 acres, as the opening will pass through the center. The same plan has been carried out for drainage as in the other one, and there is the same assurance that the men will work under the best conditions and that the coal will be in proper shape when loaded into railroad cars. The coal seam averages a thickness of four feet and runs in quality with the best domestic coals of the State.

The equipment of the tippie consists of two end-dumps of the cross-over type. They are arranged in such a manner that the cars are automatically tipped and the coal is placed upon a plate at the upper end of the one and one-quarter-inch screens, over which it passes slowly enough to insure good distribution in the weigh-boxes. After being weighed, the coal is again passed over any size of screen that the trade demands from two-inch to six-inch.

Elevators are being built for raising the egg and nut coal and as soon as completed these grades will be rescreened and washed, after which they may be loaded separately or together, as may be desired. This is an improvement that will doubtless be well received by the trade in general.

All the mine cars were made on the specifications of the company and have a capacity of 3,500 pounds each. The cars are drawn to the tippie by an electric locomotive. After leaving the tippie, they are fed back to either opening by gravity. When the workings have proceeded far enough, the company will equip both mines with electric gathering motors. A larry car with a capacity of one and a half tons is used on a gravity trestle to carry slack from the tippie to the boiler room.

The ten-ton Jeffrey locomotive, with a 56-inch wheel base and steel wheels, travels on 40-pound steel rails at a speed of ten miles an hour. The track, frogs and switches are as carefully laid as in steam road construction. As shown in the engraving, the cars are brought to the tippie from the openings over long and well-built trestles.

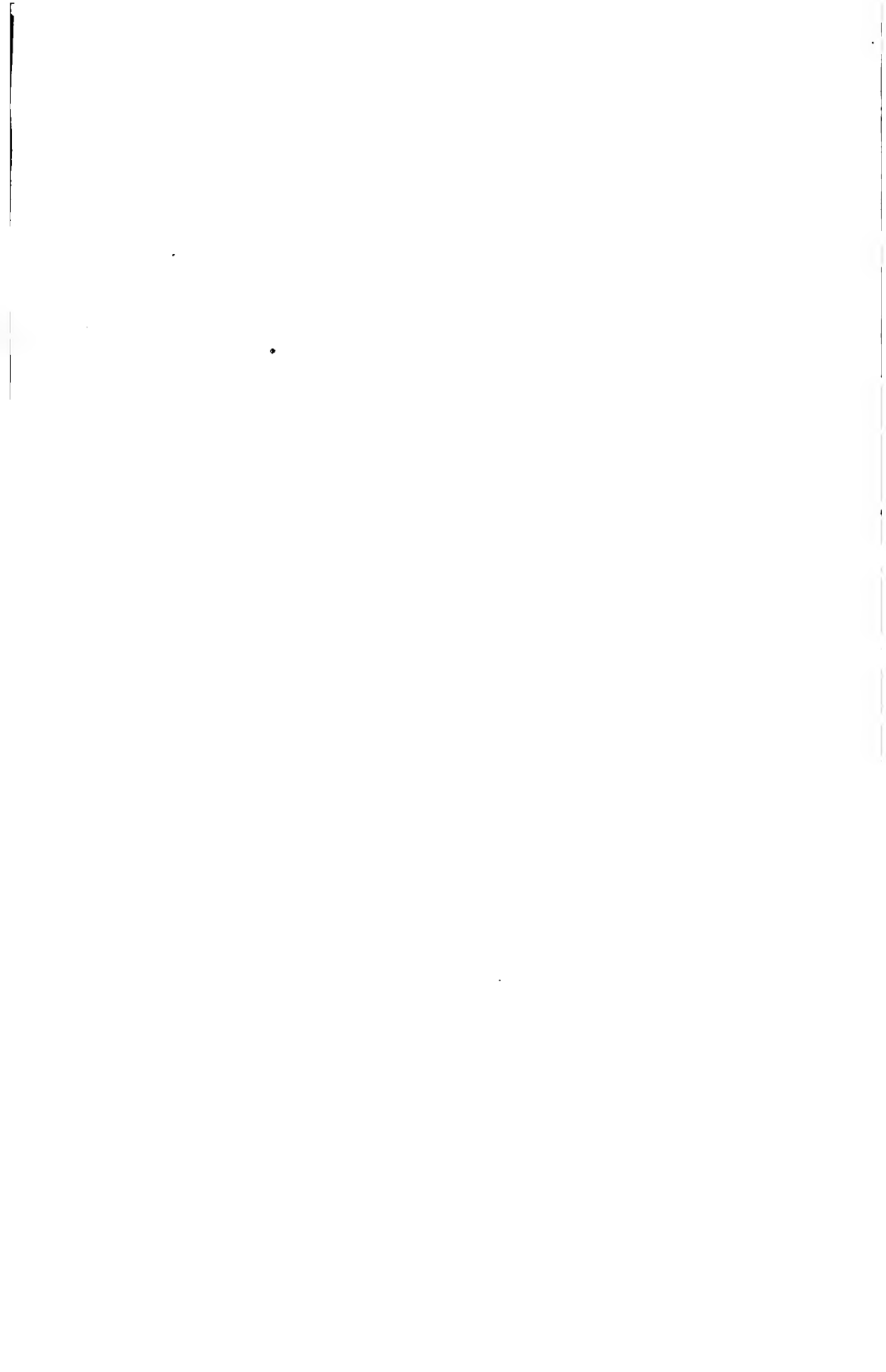
The equipment of the interior of the mines is as complete as the outer plant. The coal is undercut by Jeffrey 27B chain machines, the cut being five feet and the amount of coal to the run, one and one-half tons. By this method but 25 pounds of powder are required to throw 116 tons of lump coal, as against 21 tons with the same amount of powder in pick mining. Besides, the coal is produced large and blocky.

In the power station provision has been made for development and increased production, as the workings are pushed back under the hills. The equipment consists of two engines, two Jeffrey 150 K. W. generators and four Erie 18-inch x 72-inch boilers, hand fed. All machinery is laid on cement foundations. The buildings are constructed of tile block, with cement foundations and floors, and are fire-proof.

On the hillside above the plant a cement reservoir with a capacity for 50,000 gallons of water has been constructed. A four-inch pipe connects the reservoir with the tippie and affords a pressure of 25 pounds at the latter point.



LOADED CARS EMERGING FROM THE WARWICK MINE.



This is sufficient to throw water over all the buildings almost instantly. Besides water for fire protection, the reservoir will also supply the boilers, coal washeries and for any other purpose for which it may be needed.

The machine and blacksmith shops have been provided with steam blowers for forges, lathes, shafting and machines for all kinds of repair work. In fact, the plant is complete in almost every possible feature.

Oden Valley No. 3.

Owned and operated by same company and under same management as No. 2. Located near No. 2. Drift opening, to No. 6 seam, 3 feet 4 inches thick; furnace ventilation, mule haulage; pick mining; 25 miners and 7 day men employed. Two visits made, April 15th and August 17th. On each visit found the air deficient, and orders given to better conditions. Suggested a new and larger furnace as a remedy to improve ventilation.

Morgan Run No. 3.

Located about 3 miles from Coshocton, on the Panhandle and W. & L. E. R. R. Operated by the Morgan Run Coal Co., Cleveland, Ohio. R. B. Dennis, superintendent. Robert McCormick, mine boss. Both of Coshocton, Ohio. Drift opening, to No. 6 seam, 3½ feet thick; furnace ventilation; motor and mule haulage; 102 miners and 32 day men employed. Two visits made, April 13th and August 20th. Mine on each visit found in good condition, except just previous to last visit a squeeze had passed over three entries, cutting them off, but in no wise interfering with the other parts of the mine. Air was found in good condition, for which the management deserves credit.

Warwick No. 4.

New drift opening, to No. 6 seam, 4 feet thick. Located about 4 miles southeast of Coshocton, Ohio. Owned and operated by the Warwick Coal Co., Cleveland, Ohio. C. L. Cassingham, Cleveland, Ohio, superintendent. M. S. Wolford, Coshocton, Ohio, mine boss. Three visits made, April 16th, July 14th and August 19th. Employs 8 miners and 2 day men; fan ventilation, motor and mule haulage. Conditions approved.

Warwick No. 5.

Operated by same company as No. 4, and located near No. 4. Same superintendent. W. M. Powers, Coshocton, Ohio, mine boss. Drift opening, to No. 6 seam, 3 feet 8 inches thick; fan ventilation; motor and mule haulage; electric machine mining; 60 miners and 20 day men employed. Three visits made: April 16th, May 8th and August 19th. On May 8th visited mine to investigate fatal accident to Wallie Phillips, who was instantly killed May 6th at the stone chute on side of tippie. On other visits mine was found in good condition.

Cassingham No. 2.

Operated by the Coshocton Coal Co., Cleveland, Ohio, until early in the year, when it was abandoned by said company and leased to Thos. Furnell, Sr., who is at present operating it with about 4 miners. Visited January 19th and October 29th. Conditions fair.

Locust Grove.

Located on the W. & L. E. R. R., about 4 miles southwest of Coshocton, Ohio. Owned and operated by John Williams, same place. Floyd Fretague, superintendent. Geo. Doney, mine boss. Both of Coshocton, Ohio. New drift opening, to No. 6 seam, $4\frac{1}{2}$ feet thick; 30 miners and 3 day men employed. Furnace ventilation, pick mining, mule haulage. Two visits made, June 29th and October 27th. On former visit found mine idle, owing to a squeeze which had crossed the main entry. On second visit, mine in fair condition, but found management having trouble with large rolls.

Hudson.

Operated by Hudson Bros., Coshocton, Ohio. Located $1\frac{1}{2}$ miles east of Coshocton. Domestic mine; drift opening, to No. 6 seam, 3 feet thick. Daniel Hudson, superintendent. Edw. Hudson, mine boss; 4 miners and 1 day man employed. Condition fair; visited October 28th.

Forest Hill.

Operated by Laird Bros., R. D. No. 2, Coshocton, Ohio. Jas. Laird, superintendent and mine boss. Located about 2 miles east of Coshocton, on W. & L. E. R. R. Drift opening, to No. 6 seam, 3 feet thick; pick mining, mule haulage, furnace ventilation; 3 visits made. January 19th, found mine in fair condition; 16 miners and 2 day men employed. July 2nd, mine in poor condition. Ordered a furnace built in 30 days to relieve the situation. October 29th, found in fair condition, with furnace in operation, but labor was scarce; only 6 miners and 2 day men employed.

West No. 1.

Located near the Coshocton Brick Co.'s plant, at Coshocton, Ohio. Operated by Charles West, who is also superintendent. Geo. Smalley, mine boss. Both of Coshocton. Visited July 2nd, and found in fair condition, except air; ordered a furnace built in 30 days; 7 miners and 1 day man employed.

West No. 2.

Located about one-fourth mile from No. 1. Chas. West, owner and superintendent. Jesse Wilson, mine boss. Both of Coshocton, Ohio. Eight miners employed. Visited July 2nd; found in poor condition; ordered furnace built and air shaft sunk. Visited again July 15th and found furnace partly built and shaft down. The conditions in this mine were very bad, and concluded something must be done right away to put mine in condition fit to work.

Coshocton Clay.

Located at Coshocton, near the Coshocton brick plant. Operated by the Coshocton Brick Co., Coshocton, Ohio. Frank Cotter, superintendent. Roy Harden, mine boss. Both of Coshocton, Ohio. Drift opening, furnace ventilation, mule haulage; 9 miners and 4 day men employed. As there was no second opening, ordered that men be reduced to 10 until a second opening could be made. Visited July 15th and found in fair condition.

Comly.

Located near Coshocton. Domestic mine. Operated by Thos. J. Williams, Coshocton, Ohio. Alex. Brelen, mine boss. Drift opening, to No. 6 seam, 5½ feet thick; furnace ventilation; 3 miners employed. Mine idle when visited July 15th.

Powers.

Located near the Warwick mines, on the W. L. E. R. R. Owned and operated by the Powers Coal Co., Coshocton, Ohio. A. J. Powers, same place, superintendent and mine boss. Drift opening, to No. 6 seam, 3 feet 8 inches thick. Fire basket ventilation; mule haulage; pick mining; single entry system. This mine has just recently been purchased by the Powers Coal Co., and is being fitted to ship coal on the W. & L. E. R. R.; 11 miners and 2 day men employed. Visited August 19th and found in poor condition. However, the present management promised to improve the mine.

Drake No. 1.

Owned and operated by Thos. J. Williams. Located at Coshocton, Ohio. Jos. Robinson, same place, mine boss. Drift opening, to No. 6 seam, 3 feet thick; 3 miners and 1 day man employed. Visited July 15th; conditions fair.

Drake No. 2.

Located near No. 1. Owned and operated by same company. Visited July 15th, only to find it had been suspended for a year or more.

Shrigley.

Located about 3 miles northwest of Coshocton. Owned and operated by Chas. and Elmer Shrigley, Roscoe, Ohio. Visited June 29th; found only 2 miners working, robbing pillars. This mine will soon be finished, but a new one is being opened in the opposite hill. Mine found only in poor condition.

TUSCARAWAS COUNTY.**Mullins No. 1.**

Operated by the Jas. Mullins Coal Co., Cleveland, Ohio. Wm. Sorg, New Philadelphia Ohio, superintendent. Geo. Dean, R. D. No. 4, same place, mine boss. Drift, to No. 6 seam. Located on C. & P. R. R., about 6 miles from New Philadelphia. Fan ventilation, motor haulage; both compressed air and electric machine mining. Employs 75 miners and 35 day men. Four visits made. February 26th, mine in fair condition. May 27th, in poor condition; dust on main right entry was ordered taken out; trolley and machine wires were ordered placed in safer condition, and air ordered brought in at a new opening made at head of workings. September 14th, in fair condition, except air in 5 and 6 west entries, which had been affected as a result of a squeeze. December 15th, mine in poor condition; air was in poor circulation. Found the mine on this visit under new management. A. E. Norhus, superintendent. Lewis Bucher, mine boss. Both of New Philadelphia, Ohio. Orders were given to improve the mine in general.

Mullins New No. 2.

This is a new mine, just opened in 1908, and located near No. 1. Under same management. Drift opening, to No. 6 seam, 4 feet thick; fan ventilation, double entry system, rope and mule haulage; electric machine mining; 20 miners and 10 day men employed. Four visits made, February 26th, May 27th, September 14th and December 15th. Mine found in fair condition, but orders were given on last visit that not more than 20 men be employed until second opening was made.

Mullins No. 2—(Reeves No. 2).

Located about 4 miles from New Philadelphia, Ohio, on C. & P. R. R. Drift opening, to No. 6 seam, 4 feet thick; fan ventilation; motor and mule haulage; compressed air machine mining. On visit February 25th, this mine was operated by the Jas. Mullins Coal Co., Cleveland, Ohio. Wm. Sorg, New Philadelphia, Ohio, superintendent. Geo. Dean, mine boss, same place; 86 miners and 28 day men employed. Shortly after visited, the mine was suspended for several months, until started by the Reeves Coal Co., Canal Dover, Ohio. November 9th, found mine operated by the Reeves Coal Co. P. J. Harrigan, New Philadelphia, Ohio, superintendent. Abraham Richardson, mine boss; 20 miners and 14 day men were employed. Found management placing the mine in very good condition, and from present appearances it will soon have one of the largest outputs in Tuscarawas county.

Goshen Shaft.

Operated by the Goshen Coal & Mining Co., Cleveland, Ohio. Located on C. & P. R. R., near Roswell, Ohio. D. P. Loomis, superintendent. Peter Reis, mine boss. Both of New Philadelphia, Ohio. Shaft, 105 feet, to No. 6 seam, 4 feet thick; rope and mule haulage; pick and compressed air machine mining; fan ventilation; 65 miners and 32 day men employed. Three visits made, February 10th, June 16th and September 23rd. On the two former visits, found mine in fair condition, but safety catches on cages, when tested, failed to hold, and were condemned. On third visit, found mine in fair condition, but a squeeze was giving the management much trouble. Safety catches were again tested and found in working order. Scales were also tested and found correct.

East Goshen No. 2.

Operated by the East Goshen Coal Co., Cleveland, Ohio. Located on C. & P. R. R., at Roswell, Ohio. Wm. Empfield, superintendent. Edw. Goulder, mine boss. Both of New Philadelphia, Ohio. Slope opening, to No. 6 seam, 4 to 5 feet thick; fan ventilation, motor and mule haulage; pick and compressed air machine mining; 110 miners and 42 day hands employed. Five visits made. January 28th, in poor condition. May 18th, in fair condition, except a squeeze, which had interfered with air on 9 and 10 west entries. September 1st, found mine much improved over previous visit. September 3rd, visited mine to investigate cause of fatal accident to L. M. Beatty, who was caught by a fall of stone while operating a cutting machine. December 10th, mine found in poor condition. Orders were given to improve ventilation and clean manway. Chain hoist was found in poor condition, and men were ordered not to travel up or down while chain was in motion.

Goshen Hill.

Located at Roswell, Ohio, on C. & P. R. R. Operated part of the year by the Goshen Hill Coal Co., of Cleveland, Ohio. Frank McIntosh, superintendent. Geo. McIntosh, mine boss. Both of New Philadelphia, Ohio. Under this management the mine was visited three times. February 11th, May 18th and September 16th. On each visit the mine was found in very poor condition. Drift opening, to No. 6 seam, $4\frac{1}{2}$ feet thick; rope and mule haulage; pick mining; furnace ventilation. December 16th, found management changed. T. G. Brooks, superintendent. Peter Kirk, mine boss. Both of New Philadelphia, Ohio. While the mine was not in good condition, it was being rapidly improved. An opening is being made into Beaver Dam No. 1, which will much improve this mine.

Goshen Central.

Operated by Goshen Central Coal Co., Massillon, Ohio. Located on C. & F. R. R. Wm. K. Moore, New Philadelphia, Ohio, superintendent and mine boss. Drift, to No. 6 seam, $3\frac{1}{2}$ to 5 feet thick; fan ventilation; motor and mule haulage; pick and electric machine mining; 70 miners and 25 day men employed. Three visits made: March 31st, July 20th and December 8th. Mine in fair condition, except on first and last visits quantities of black-damp were found circulating in the air. Orders were given to increase volume of air sufficient to dilute and render harmless the black-damp; also ordered engines guarded.

Beaver Dam No. 1.

Operated by the Beaver Dam Coal Co., Cleveland, Ohio. Located at Roswell, Ohio, on C. & P. R. R. T. G. Brooks, superintendent. Evan Phillips, mine boss. Both of New Philadelphia. Shaft, to No. 6 seam, fan ventilation, electric haulage, pick and electric machine mining; 75 miners and 30 day men employed. Five visits made. February 9th, mine in reasonably fair condition. April 8th, cages were found in bad condition, and men were forbidden to ride on them. Requested the management to repair cages and shaft before men were permitted to go up or down. April 9th, visited again, and found in fair general condition, but hoisting cages were not satisfactory, and men were ordered to use traveling manway until cages were repaired and made satisfactory. August 31st, found air in poor circulation; orders were given to conduct air (which at inlet was sufficient) in order to circulate to the working places. December 9th, found mine and air in better condition. The mine was undergoing many changes, which will greatly improve it.

Beaver Dam No. 2.

Operated by same company as No. 1. Located two miles from Midvale, on B. & O. R. R. T. G. Brooks, New Philadelphia, Ohio, superintendent. Elmer Tidrick, Midvale, Ohio, mine boss. Shaft, 85 feet deep, to No. 6 seam, 4 feet thick; fan ventilation, electric and mule haulage; pick mining; 94 miners and 27 day men employed. Two visits made: March 11th and June 17th. On each visit mine found in fair condition. On former visit a light was ordered placed in front of trip where motor was used to push cars.

Houk.

Operated by the American Sheet & Tin Plate Co., Pittsburg, Pa. J. L. Houk, superintendent. Emmet Carnes, mine boss. Both of Stillwater, Ohio. Drift,

to No. 7 seam, 5 feet thick. Motor and mule haulage; fan ventilation; pick mining; 40 miners and 20 day hands employed. Two visits made: April 22nd and September 15th, and mine found in good condition.

Hazel No. 6.

Operated by the Royal Goshen Coal Co., New Philadelphia, Ohio. Located about one mile from Midvale, on the B. & O. R. R. Drift opening, to No. 6 seam, $4\frac{1}{2}$ feet thick. H. E. Cole, superintendent. C. B. Fox, mine boss. Both of Midvale, Ohio. Furnace ventilation, rope haulage, pick mining; 50 miners and 16 day hands employed. Two visits made: April 20th and November 23rd. Conditions fair. Mine was suspended from June 1st to October 1st.

Wainwright No. 4.

Operated by the Midvale-Goshen Coal Co., Cleveland, Ohio. Located at Wainwright, Ohio, on B. & O. R. R. Frank McIntosh, New Philadelphia, Ohio, superintendent. R. R. Reichman, Wainwright, Ohio, mine boss. Slope, to No. 6 seam, 4 feet 4 inches thick. Rope and mule haulage; 30 miners and 7 day hands employed. Two visits made: March 10th and July 22nd. Mine is being fast worked out, and from present appearances will not last long.

Midvale-Goshen No. 6.

Operated by Midvale-Goshen Coal Co., Cleveland, Ohio. Located at Wainwright, Ohio. Frank McIntosh, superintendent, New Philadelphia, Ohio. John Horger, Wainwright, Ohio, mine boss. Slope opening, to No. 6 seam; fan ventilation, motor and mule haulage. Electric machine mining; 71 miners and 22 day men employed. Four visits made: January 29th, March 9th, July 21st and October 12th. On first two visits mine in fair condition. July 21st, found in poor condition; air deficient and great amount of dust collected on entries. Ordered ventilation improved and dust sprinkled and removed. October 12th, found new 16-foot fan in operation, and mine in fair condition, except for dust, which was ordered from the mine.

Midvale-Goshen No. 7.

Located near No. 6 and operated by same company. Same superintendent. Chas. Lorenz, Wainwright, Ohio, mine boss. Drift, to No. 6 seam, 4 feet thick; furnace ventilation; rope and mule haulage; pick and electric machine mining; 113 miners and 25 day men employed. Two visits made: March 9th and July 22nd. On each visit mine was found in reasonably good condition.

Goshen No. 2.

Operated by the Goshen Valley Coal Co., Massillon, Ohio. Located at Goshen, on the B. & O. R. R. Herman Schneider, Beidler, Ohio, superintendent. Gibson Carlisle, Beidler, Ohio, mine boss. Slope, to No. 6 seam, 4 feet thick; fan ventilation; rope and mule haulage; pick mining; 62 miners and 17 day men employed. Three visits were made: April 29th, July 27th and September 2nd. On last visit ordered fan kept in operation night and day in order to drive out black damp, which was found in two entries of the mine.

Goshen No. 3.

Operated by the same company as No. 2. Located near Goshen, on the B. & O. R. R. Herman Schneider, New Philadelphia, Ohio, superintendent. Jesse Walton, mine boss. Drift, to No. 6 seam, $4\frac{1}{2}$ feet thick; furnace ventilation; mule haulage; 27 miners and 5 day men employed. Two visits made: April 29th and September 17th. On first visit found mine in poor condition; air very deficient. Orders were given to improve air conditions immediately. On second visit found mine in fair condition.

West Goshen.

Operated by Cleveland-Tuscarawas Coal Co., Cleveland, Ohio. Located at Joyce, Ohio, on the C. & M. R. R. C. L. Cassingham, Cleveland, Ohio, superintendent. Emery Ankney, New Philadelphia, Ohio, R. D. No. 2, mine boss. Drift opening, to No. 6 seam, 4 to 5 feet thick; fan ventilation; motor and mule haulage; pick and machine mining; 68 miners and 29 day men employed. Three visits made: February 24th, June 18th and November 26th. On each visit mine found in fair condition.

Veleney.

Operated by the Royal-Goshen Coal Co., New Philadelphia, Ohio. Located at Barnhill, Ohio, on B. & O. R. R. C. B. Fox, Midvale, Ohio, superintendent. Anthony Wannacott, Barnhill, Ohio, mine boss. Furnace ventilation, mule haulage, pick mining; 40 miners and 10 day men employed. Drift opening, to No. 6 seam, 4 feet 4 inches thick. Five visits made. February 23rd, air was found in such poor condition that it was necessary to remove the men from the mine until a larger furnace stack could be built. Mine was idle until March 15. March 12th, found much improved, but not up to the standard for good results. July 13th and September 3rd, in fair condition. December 13th, in reasonably fair condition, except furnace had ignited the coal in close proximity to it, which was giving the management quite a little trouble. The mine has been troubled much during the year with black damp, owing to mine holing into old Brock Hill workings so much. A new opening was recently made near head of workings.

Indian Hill.

Operated by the Buysner Coal Co., Cleveland, Ohio. Located one mile west of Uhrichsville, Ohio, on the Panhandle R. R. John Ronald, Uhrichsville, Ohio, superintendent and mine boss. Drift opening, No. 6 seam, 4 feet thick; fan ventilation; motor and mule haulage; electric machine mining; 51 miners and 21 day hands employed. Four visits made. April 23rd, in fair condition, except dangerous stone in No. 12 east entry, which was ordered made safe. April 24th, visited mine to investigate fatal accident to John Elwood, who was instantly killed by a fall of stone on the 12th east entry on the night of the 23rd, after going back to look at a shot they had fired in the roof while making height in the entry. July 28th, a squeeze was passing over 9 and 10 butts, shutting off that part of the mine. December 14th, found in fair condition. A new 10-foot Brazil fan had been installed and was in operation.

Somerdale No. 1.

Located at Somerdale, on the W. & L. E. R. R., and operated by the Somerdale Coal Co., Cleveland, Ohio. Jas. Hardridge, Somerdale, Ohio, super-

intendent and mine boss. Drift opening, to No. 6 seam, 4 feet thick; furnace ventilation; rope and mule haulage; pick mining, solid shooting; 45 miners and 14 day men employed. Three visits made. February 5th, mine found in poor condition; orders were given to better the circulation of air to the working face. April 26th, mine was found in much better condition than on previous visit. August 2nd, much improved in every way, and air in fair circulation. Shortly after last visit mine was closed down and is yet suspended.

Central Valley.

Operated by the Massillon-Tuscarawas Coal Co., Massillon, Ohio. Located at Johnstown, on W. & L. E. R. R. C. C. Smith, Somerdale, Ohio, superintendent and mine boss. Drift opening, to No. 6 seam, 3 feet 8 inches thick; fan ventilation, rope and mule haulage; compressed air machine mining. Four visits made. April 2nd, air was only in poor circulation. Orders were given to improve same as soon as possible. April 27th, condition much improved. August 3rd, found in fair condition; air in reasonably good circulation. November 8th, mine found in fair condition, but stoppings between main inlet and outlet were only in poor shape, and were ordered given attention immediately.

Huff Run No. 1.

Operated by the Ridgway Burton Co., Cleveland, Ohio. Located at Mineral City, Ohio, on the B. & O. R. R. Drift opening, to No. 5 seam, 3½ feet thick; fan ventilation; rope and mule haulage; pick mining; 35 miners and 15 day men employed. Four visits made. March 18th, in fair condition, except in mud entry, where air was very deficient, and men were ordered out until a new shaft could be sunk. Visited March 26th; found shaft down, but not completed. Ten days were given to complete shaft and put in ladder for escape for men. July 8th, found mine in fair condition, with air in fair circulation. September 28th, visited in company with Chief Inspector Harrison and District Inspector Miller, of Massillon, to ascertain the cause of black damp being forced into the South Side mine.

Massillon-Peacock.

Operated by the Peacock Coal Mining Co., Mineral City, Ohio. Located at Mineral City, on the B. & O. R. R. John Puncheon, superintendent. D. H. Puncheon, mine boss. Both of Mineral City, Ohio. Drift opening, to No. 5 seam, 3½ feet thick; 18 miners and 11 day men employed. Furnace ventilation; rope and mule haulage; pick mining. Two visits made: March 19th and September 8th. Mine on each visit found in good condition.

South Side.

Owned and operated by C. E. Holden, Mineral City, Ohio. Located on B. & O. R. R. Drift opening, to No. 5 seam, 3½ feet thick; furnace ventilation; mule haulage; pick mining. Harry Wood, superintendent. Wm. G. Smith, mine boss. Both of Mineral City, Ohio. Five miners and 4 day men employed. Three visits made. March 16th, mine in fair condition, except part of the main haulway was covered with water for several hundred feet. July 7th, found the air in the mine heavily mixed with black damp, which was being forced into this mine from Huff Run No. 1. September 28th, visited in company with Chief Inspector Harrison, District Inspector Miller of Massillon, and representatives of the company, to investigate causes of black damp being

forced around this mine. Suggestions were made to the management of both companies interested that the force fan at the Huff Run mine be kept running every day or reversed and converted into an exhaust instead of a force fan. If either of these suggestions were put into practice there could be no doubt as to the results.

Royal Goshen No. 2.

Operated by the Royal Goshen Coal Co., New Philadelphia, Ohio. Located near the Royal Sewer Pipe plant, on B. & O and Panhandle R. Rs. R. W. Rutledge, superintendent. Edw. White, mine boss. Both of Midvale, Ohio. Drift opening, to No. 6 seam, $4\frac{1}{2}$ feet thick; furnace ventilation, mule haulage; pick mining; 11 miners and 2 day men employed. Two visits made. April 21st, mine found in poor condition, but found the management occupied endeavoring to better conditions. September 30th, found the mine in good condition, and air in good circulation, with a new second opening made for travel and water.

Royal Goshen No. 3.

Operated by the Royal Goshen Coal Co., Midvale, Ohio. Located near Midvale, on the B. & O. R. R. C. B. Fox, superintendent. Wm. Fairless, mine boss. Both of Midvale, Ohio. Drift opening, to No. 6 seam, $4\frac{1}{2}$ feet thick; furnace ventilation; rope and mule haulage; pick mining; 35 miners and 10 day men employed. Three visits made: March 12th, July 23rd and December 13th, and on each visit mine was found in fair condition.

Acme No. 2.

Operated by G. J. Markley, Mineral City, Ohio. Located one mile east of Mineral City, on B. & O. R. R. E. L. Jones, same place, manager. Drift, to No. 5 seam, 3 feet thick; furnace ventilation; mule haulage; 13 miners and 6 day men employed. Three visits made. March 19th, mine found in fair condition. July 7th, air in mine was found polluted with black damp; air was making short circuit through a ditch and two or three stoppings, cutting off circulation from head of workings. The management proceeded to repair leakages and air was again put in normal condition. October 11th, mine found in fair condition.

Federal Coal.

Operated by the Federal Clay Product Co., Mineral City, Ohio. Located at Factory No. 1, Mineral City. E. L. Jones, same place, superintendent and mine boss. Drift, to No. 5 seam, 3 feet thick; mule haulage; pick mining; 9 miners and 3 day men employed. Three visits made: March 17, July 7th and October 25th. On two former visits, mine in fair condition. On last visit, found air very deficient, and as this mine is ventilated by a furnace in the clay mine beyond, necessitating the air to pass through old works, ordered furnace built for use in 15 days in this mine, in order to supply the amount of air required by law.

Novelty No. 1.

Operated by the Novelty Brick & Coal Co., near Newcomerstown, Ohio, on the C. & M. R. R. R. L. Shoemaker, superintendent. Geo. Adams, mine boss. Both of Newcomerstown, Ohio. Drift opening, to No. 6 seam, 2 feet 9 inches thick; fan ventilation, mule haulage, pick and machine mining; visited March 30th, but found mine idle; fan was in operation. Made inspection and found mine in fair condition; 18 miners and 6 day men employed.

Novelty No. 2.

Located about one-half mile south of No. 1 and under the same management. This is a new mine just opened, but was idle until pumps could be put in to handle the water.

Royal No. 3.

Located at the Royal Sewer Pipe works, Midvale, Ohio. Operated by John S. Scott, Jr. Drift opening, to No. 6 seam, $4\frac{1}{2}$ feet thick; natural ventilation; mule haulage. Visited April 21st and September 30th. On each visit mine was found in poor condition.

Diamond Coal.

Operated by the American Sewer Pipe Co., Akron, Ohio. Located on the C. & M. R. R., at Uhrichsville, Ohio. J. M. McClave, superintendent. Levi Ross, mine boss. Both of Uhrichsville, Ohio. Drift, to No. 6 seam, 4 feet thick; furnace ventilation; mule haulage; 11 miners and 10 day men employed. Visited April 30th and September 21st; conditions good.

Buckeye Coal.

Operated by the Buckeye Fire Clay Co., Uhrichsville, Ohio. Located about one mile west of Uhrichsville, on the Panhandle R. R. W. B. Stevens, same place, superintendent. H. K. Pfister, Tuscarawas, Ohio, mine boss. Drift opening, No. 6 seam, 3 feet 8 inches thick; furnace ventilation; mule haulage; pick mining; 10 miners and 2 day men employed. Visited July 28th; found all men engaged in robbing pillars preparatory to abandonment.

Advance Coal.

Operated by the Advance Fire Clay Co., Uhrichsville, Ohio. Located one mile north of Uhrichsville, on the B. & O. R. R. Geo. Ross, superintendent. Joseph Shilon, mine boss. Both of Uhrichsville, Ohio. Drift opening, to No. 6 seam, furnace ventilation, mule haulage, pick mining; 4 miners and 1 day man employed. Visited May 20th, mine found in poor condition. The return airway was choked and in bad condition; requested same given immediate attention.

Pleasant Hill.

Operated by Breyer Bros., New Philadelphia, Ohio, R. D. No. 2. Located about $2\frac{1}{2}$ miles west of New Philadelphia, Ohio. Frank Breyer, superintendent. Geo. Kuhn, mine boss. Drift, to No. 6 seam, 4 feet thick; natural ventilation; mule haulage; pick mining; 8 miners and 2 day men employed. Visited May 19th; mine was idle; no one working; no inspection made. November 24th, found mine in poor condition; ordered furnace or fan placed right away. A new air shaft has recently been sunk.

Morey Ridge.

Operated and managed by C. J. Nungesser, Beidler, Ohio. Drift, to No. 6 seam, $4\frac{1}{2}$ feet thick. Located near Beidler, Ohio, on the B. & O. R. R. Furnace ventilation, mule haulage, pick mining; 13 miners and 2 day men employed.

Visited March 10th; found 4 rooms in operation; the remainder of men were robbing pillars. This mine was shut down all summer and until well into fall.

Robinson-Graves Coal.

Operated by the Robinson-Graves Clay Co., Uhrichsville, Ohio. Located about two miles north of Uhrichsville, Ohio, on the B. & O. R. R. Drift, to No. 6 seam, 4 feet thick; furnace ventilation, mule haulage, pick mining; 10 miners and 2 day men employed. Two visits made: May 21st and October 13th, and found in fair condition on each visit.

Stettler.

Owned and operated by B. Gibson's Sons, New Philadelphia, Ohio. Located about one mile north of city. Drift opening, to No. 6 seam, 3½ feet thick; 5 miners employed. Furnace ventilation, mule haulage. Visited November 22nd; found a new air shaft had been put down since last visit. Mine in fair condition.

Burgis No. 1.

Located about 2½ miles southeast of Canal Dover. This mine was visited twice during the year and was found idle. Little has been done on account of repairing road over which coal is hauled to Canal Dover.

Burgis No. 2.

Located near No. 1, and operated by Jas. and Addison Burgis, Canal Dover, Ohio. Drift, to No. 6 seam, 4 feet thick. This mine was visited twice during year, and on each visit mine was idle, with no one in evidence from whom to gather any information. No inspections were made.

N. O. T. & L.

Located four miles from New Philadelphia, on the street car line. Operated by H. R. Brown, of New Philadelphia, Ohio, who is also superintendent. Patrick Selby, also of New Philadelphia, mine boss. Drift opening, to No. 6 seam, 4 feet thick. Three visits made. July 26th, mine was being operated by the street car company, and was in a deplorable condition. Ordered furnace or fan put up to force circulation of air. August 13th, again visited mine to ascertain whether my orders were being carried out. Found mine had been leased to Mr. Brown, who was having furnace built, to which objections were raised on account of location. Management changed location and erected larger furnace and stack. October 1st, found mine in fair condition; 5 miners and 1 day hand employed.

Laughlin.

Located about 2½ miles east of Mineral City, on C. & P. R. R. New mine recently opened, owned and operated by the Laughlin Coal Co., Mineral City, Ohio. Drift, to No. 5 seam, 4 feet thick; fire basket ventilation; mule haulage; pick mining; 9 miners and 2 day men employed. Visited August 13th and found in fair condition. Wm. Laughlin, manager.

Miskimens.

Located near Newcomerstown, Ohio. Operated by Chas. Langhead, who is also manager. Drift, to No. 6 seam, $3\frac{1}{2}$ feet thick; furnace ventilation; 4 miners employed. Visited March 30th and found in fair condition.

Eureka.

Located one-half mile northeast of New Philadelphia, Ohio. Operated by the Goshen Mining Co., New Philadelphia, Ohio. C. R. Klein, superintendent and mine boss. Drift, to No. 6 seam, 5 feet thick; furnace ventilation; mule haulage; pick mining; 11 miners and 2 day men employed. Visited November 9th and found in fair condition.

Horn.

Located two and one-half miles west of Canal Dover, Ohio. Operated by Frank Breyer, R. D. No. 2, New Philadelphia, Ohio, who is also manager. Drift, opening to No. 6 seam, 3 feet 3 inches thick; natural ventilation; mule haulage; pick mining; 9 miners and 1 day man employed. Visited November 24th and found in good condition.

Tuscarawas Electric Light.

Located one mile north of New Philadelphia, Ohio. Operated by the Tuscarawas Electric Light Co., New Philadelphia, Ohio. Drift, opening to No. 6 seam, $4\frac{1}{2}$ feet thick; furnace ventilation; mule haulage; 3 miners and 1 day man employed. Visited November 22nd, conditions fair.

Evans Coal.

Located one-half mile southwest of Uhrichsville, Ohio, on the C. L. & W. R. R. Operated by the Evans Clay Mfg. Co., Uhrichsville, Ohio. Walter McMillen, superintendent and mine boss. Drift, to No. 6 seam, $3\frac{1}{2}$ feet thick; furnace ventilation; mule haulage; pick mining; 10 miners and 2 day men employed. Visited February 8th and July 16th; on each visit found conditions fair.

National Coal.

Located near Strasburg, Ohio. Operated by the National Fire Brick Co., Strasburg, Ohio. Thos. Kemp, Canal Dover, Ohio, superintendent. Martin Ciapper, Strasburg, Ohio, mine boss. Drift, to No. 5 seam, 3 feet 3 inches thick; furnace ventilation, mule haulage; pick mining; 6 miners and 1 day man employed. Visited April 28th and September 22nd. Conditions fair.

Beers.

New mine, located near Newcomerstown, Ohio. Owned and operated by W. D. Beers, Newcomerstown, Ohio. M. J. Louderbaugh, manager. Drift, to No. 6 seam, 2 feet thick; natural ventilation; 5 miners and 1 day man employed. Condition fair. Visited March 30th.

Seward English.

Located near Lockport, Ohio. Owned by Seward English, New Philadelphia, Ohio. Drift, to No. 6 seam, 4 feet thick. December 24th, investigated the fatal accident to Wm. Fellers and Christ Vogley (the only men working in the mine), who were instantly killed by a fall of rock while turning a room off the entry. Mine was in fair condition.

South Side Clay.

Owned and operated by C. E. Holden, Mineral City, Ohio. Located on B. & O. R. R., Mineral City, Ohio. Solid blasting. Visited March 16th and July 7th. On each visit conditions found fair. Harry Wood, superintendent. Wm. G. Smith, mine boss. Both of Mineral City, Ohio. Seven men employed.

Federal Clay.

Owned and operated by the Federal Clay Product Co., Mineral City, Ohio. E. L. Jones, superintendent and mine boss. Furnace ventilation, mule haulage. Visited March 17th, July 7th and October 21st. On each visit found the mine in fair condition. On account of the great height of this mine it is very dangerous. This, in a measure, has been overcome by leaving in clay for roof, but frequently some miner will get his shot too high and break the roof, exposing the danger.

Royal Clay.

Located at the Royal Clay Works, Midvale, Ohio. Operated by the Robinson Clay Product Co., Akron, Ohio. Eugene Smith, New Philadelphia, Ohio, superintendent. Lewis Just, Barnhill, Ohio, mine boss. Shaft, 80 feet deep; steam hoist, fan ventilation, mule haulage. Electric drills are used. All shots are prepared and fired by special men employed by the company. About 30 men are employed continuously. Four visits made: April 19th, May 26th, August 16th and December 7th. On each visit mine was found in fair condition. May 26th, visited mine to investigate fatal accident to Wm. Hines, driver, who was killed May 25th by being crushed between a loaded and an empty car, which he had left at the 4th cut-off. There was a slight hill for him to come down, and the car seemed to get from under his control. To save his mule, he stuck to the car until it crushed him, causing his death. August 16th, again visited the mine to investigate fatal accident to Duston Yelowats, who was killed by a fall of roof clay in the neck of a room he was just turning.

Diamond Clay.

Operated by the American Sewer Pipe Co., Akron, Ohio. Located on the B. & O. R. R., Uhrichsville, Ohio. J. M. McClave, superintendent. Alex Waters, mine boss. Both of Uhrichsville, Ohio. Visited April 30th. Mine was in poor condition. Gave orders that mine must have better circulation of air. September 21st, found mine in fair condition, and an entry being driven to the outside to locate a furnace and shaft. Seven miners and 2 day men employed.

Buckeye Clay.

Operated by the Buckeye Fire Clay Co., Uhrichsville, on the Panhandle R. R. W. B. Stevens, superintendent. Henry Adamson, mine boss. Both of

Uhrichsville, Ohio. Slope opening, furnace ventilation; 8 miners and 3 day men employed. Visited September 21st; found mine with a squeeze passing over the main entry, which had almost closed the air course. Men had been transferred into another part of the mine until timbering could be done and air restored.

Robinson-Graves Clay.

Operated by the Robinson-Graves Company, Uhrichsville, Ohio. Located near the Robinson-Graves Sewer Pipe plant, on the B. & O. R. R. Drift opening, furnace ventilation, mule haulage, solid blasting. Three visits made: January 27th, May 21st and October 13th. On each visit mine was found in fair condition. May 21st, found new air shaft had been provided. Wm. Tanzie, of Dennison, Ohio, is manager.

Advance Clay.

Operated by the Advance Fire Clay Co., Uhrichsville, Ohio, located one mile north of Uhrichsville, on the B. & O. R. R. Gus Ross, Sr., superintendent. Geo. Ross, Jr., mine boss. Both of Uhrichsville, Ohio. Drift opening, natural ventilation, mule haulage; 4 men employed. Visited May 20th and found conditions fair.

Dover Fire Brick Clay.

Operated by the Dover Fire Brick Co., Strasburg, Ohio. Located near Strasburg, on the B. & O. R. R. P. Arnold, superintendent. Robert Bowen, mine boss. Both of Strasburg, Ohio. Drift opening, furnace ventilation; mule haulage; visited April 28 and September 22nd. On each visit conditions were found fair. September 22, found new second opening made at head of workings; 15 men employed

Evans Clay.

Operated by the Evans Clay Mfg. Co., Uhrichsville, Ohio. Located one-half mile south of Uhrichsville, on the B. & O. R. R. Walter McMillen, manager. On first visit, February 8th, mine was idle; furnace had ignited the coal near it, which had burned for over four months. The management had spent a great amount of money endeavoring to extinguish it, but without effect. Recommended air-tight stoppings built at once. On next visit, July 16th, was informed that fire had gone out ten weeks after our former visit. Mine is now in good condition.

National Clay.

Operated by the National Fire Brick Co., Strasburg, Ohio. Located near Strasburg, at plant of National Fire Brick Co. Thos. Kemp, Canal Dover, Ohio, superintendent. Martin Clapper, Strasburg, Ohio, mine boss. Drift opening, furnace ventilation. April 28th, found air in poor circulation; furnace stack had been blown down, and the furnace was little account without it. We ordered stack built immediately. September 22nd, air was not well trained and a door was ordered placed on main entry at once.

New National Clay.

Operated by the same company and under same management as the National Clay. Located about one-fourth of a mile from National Clay mine. This mine has just lately been opened. Four miners are employed. Mine in good condition.

MINES VISITED OUTSIDE OF SIXTH DISTRICT.**Elizabeth Mine, Jefferson Co.**

Located at Wolf Run, near Amsterdam, Ohio. Was visited March 1st in company with Chief Inspector Harrison, District Inspectors Miller of Massillon and Morrison of Sherodsville, Ohio, it being in Mr. Morrison's district. He will, no doubt, record in detail.

National Fireproofing, No. 2, Stark Co.

Located at Waynesburg, Stark county, on C. & P. R. R. This visit was made in company with Chief Inspector Harrison, District Inspector Miller and the management, a full report of which will doubtless be made by Inspector Miller, in whose district the mine is located.



SEVENTH DISTRICT

W. H. MILLER.

COMPOSED OF THE COUNTIES OF HOLMES, MAHONING, MEDINA, OTTAWA,
PORTAGE, STARK, SUMMIT, TRUMBULL AND WAYNE.

Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio:

DEAR SIR:—In accordance with the laws of Ohio, and the custom of the Mining Department, I have the honor of submitting to you my annual report of the Seventh Mining District, for the year beginning January 1st, 1909, and ending December 31st, 1909.

The district comprises the counties of Holmes, Mahoning, Medina, Ottawa, Portage, Stark, Summit, Trumbull and Wayne.

During the time covered by this report, 40 permanent improvements were made, as follows: 1 furnace, 6 fans; 13 second openings; 6 safety catches; 10 stairways; 4 speaking tubes.

Nine new mines were opened, 8 suspended and 8 abandoned.

Eleven sets of scales were tested, of which 7 were accurate and 4 inaccurate.

I regret to report 4 fatal accidents, and 1 death from natural cause, in connection with the operation of mines, in this district for the time covered by this report, attributed to counties as follows: Stark, 1; Anglo Roberts, who was injured by fall of stone in Taggart No. 3 mine on January 9th, and died January 22nd; Jacob Kraft, died of natural causes while in the act of removing an empty car from the cage in the Massillon City mine, near West Brookfield, Ohio. Wayne county: Richard Edwards was injured by a fall of stone at the face of his room while in the act of barring off coal in No. 21 mine, on September 23rd, and died the same day from his injuries. Portage county: Evan Richards was electrocuted in Hutson No. 4 mine, on March 18th, by coming in contact with the electric wire. The alternating current carried at this mine is about 550 volts, which is very dangerous. Ottawa county: John Demo was killed by a shot going off upon him in the No. 1 North mine in Ottawa county.

You will agree with me that about one-half of the fatalities result from carelessness on the part of the victim or victims, or on the part of others. This being the case, the statement must go unchallenged. The loss of lives will continue until the workmen themselves, and those in charge of the workmen, exercise greater care. It is a common occurrence for the inspector while making his inspection to find men working under dangerous conditions, and being compelled to stop them until the place is properly timbered. Familiarity with danger breeds a spirit of recklessness or negligence, which often results in the loss of life and destruction of property.

The mines of this district, taken as a whole, scarcely worked half time.

At the request of Chief Inspector of Mines Geo. Harrison, 8 visits were made to mines out of my district, in the following counties: Tuscarawas, 2; Belmont, 1; Jefferson, 2, and Columbiana, 3.

I received a telegram from Chief Inspector Geo. Harrison to meet District Inspectors Smith and Morrison at Salem, Ohio, on September 9th, to make an examination of the Big Walnut, McNab and Delmore mines, the object being to ascertain whether the conditions of these mines were similar or not. Two days were required to make a thorough examination of said mines. We found but little difference. A detailed report was filed with the chief inspector of mines, which, no doubt, will appear in this report.

In conclusion, permit me to say that the entire year of my official duties was of a pleasant character, and I wish to extend to you my sincere thanks for your valuable assistance, which is highly appreciated by me.

Respectfully submitted,

W. H. MILLER, R. D. No. 1, Massillon, Ohio,
December 31, 1909. Inspector 7th District.

MEDINA COUNTY.**Hambleton.**

Located near Wadsworth, Ohio. Operated by Hambleton Coal Co., Wadsworth, Ohio. Geo. Hambleton, same place, has entire charge. Drift, No. 1 seam of coal, 4 feet thick; furnace ventilation; employs 7 miners and 2 day men. April 13th, July 21st and November 17th, mine was found in compliance with the law.

Long Shaft.

Located near Wadsworth, Ohio. Operated by Williams Coal Co., Wadsworth, Ohio. Burt Huffman, same place, has full charge. Shaft, 64 feet, into the No. 1 seam of coal, 4 feet thick; exhaust steam ventilation, and employs 7 miners and 2 day men. Three inspections made: April 14th, July 22nd and November 18th. On each inspection mine was found in good condition.

Klondyke.

Located near Wadsworth, Ohio, on the Erie R. R. Operated by the Hutchinson Coal Co., Wadsworth, Ohio. Jno. Hutchinson has full charge. Slope opening, 150 feet in length, entering the No. 1 seam of coal, from 3 to 3½ feet thick; furnace ventilation; from 5 to 8 miners and 2 day men employed. April 14th, suggested that several sets of timber in the slope be replaced by new ones. Aside from this, conditions were fair.

Pleasant Valley.

Situated near Wadsworth, Ohio. Owned and operated by Gerstenslager & Son, Wadsworth, Ohio. V. Gerstenslager has full charge. Slope, 196 feet in length, penetrating the No. 1 seam, 4 feet in thickness; exhaust steam ventilation; 6 to 8 miners and 3 day men employed. Three visits made. April 12th, July 20th and November 15th. On each occasion mine was found in good condition.

Reichard.

Located near Wadsworth, Ohio. Owned and operated by F. T. Reichard, same place, who has full charge. Shaft, 40 feet in depth, entering the No. 1 seam, 3½ feet thick; ventilated by exhaust steam; employs 8 miners and 2 day men. April 13th, idle; inspection made and found in fair condition. July 21st, idle; boiler was being repaired. As the mine is ventilated by exhaust steam, no measurements of ventilation could be taken, and no inspection was made.

Birkbeck.

Situated near Wadsworth. Operated by the Birkbeck Coal Co., Wadsworth, Ohio. J. P. Birkbeck has full charge. Slope opening, 210 feet in length, penetrating the No. 1 seam, 4 feet thick; ventilated by exhaust steam; 7 miners and 2 day men employed. Two inspections made: April 13th and November 17th, and found in compliance with the law.

James No. 4.

Was worked out and abandoned during the year.

Pleasant View.

Located near Wadsworth, on the Erie R. R. Operated by the James Coal Co., Wadsworth, Ohio. Thos. James has full charge. New slope opening, 238 feet in length, penetrating the No. 1 seam of coal, 4 feet thick; ventilated by exhaust steam; employs 22 miners and 5 day men. July 21st and November 18th, ventilation deficient in No. 3 entry. Orders were given for breakthrough; door erected and stairway placed in second opening.

Star.

Operated by the Hutchinson Coal Co., Wadsworth, Ohio. Slope opening, 50 feet in length, into the No. 1 seam of coal, 4 feet thick; employs 4 miners and 1 day man.

MAHONING COUNTY.**Fairview.**

Situated on the Erie R. R., near Washingtonville, Ohio. Operated by the Ohio Coal & Clay Co., Cleveland, Ohio. Chas. Abblett, Leetonia, Ohio, has full charge. Slope opening, 300 feet in length, into No. 3 seam of coal, varying in thickness from 3 to 3½ feet; ventilated by fans. Single entry system; employs 50 miners and 12 day men. February 24th, former orders complied with. May 26th, ventilation deficient in No. 3 entry; ordered check door erected. October 7th, former orders complied with. Mine in fair condition.

Greenamyre.

Located east of Salem, Ohio. Operated by J. J. Lipplatt, R. D. No. 6, Salem, Ohio, who has full charge. Shaft opening, 107 feet, into No. 3 seam, about 3 feet thick; natural ventilation; employs from 6 to 10 miners and 2 day men. March 15th, former orders had been but partially complied with. October 25th, found ventilation deficient in No. 3 room in No. 1 entry; ordered air course cleaned out.

Allison.

Situated near Salem, Ohio. Operated by Callihan & Allison Coal Co., Salem, Ohio. John Allison, same place, has full charge. Slope opening, No. 3 seam, 3 feet thick; fan ventilation; 10 miners and 2 day men employed. March 15th and October 25th, found in compliance with law.

Five Points.

Located near North Lima, Ohio. Operated by McDonald Bros., North Lima, Ohio. J. A. McDonald has full charge. Shaft opening, 70 feet, No. 3-A seam, 3 feet thick; exhaust steam is used as a ventilating power; 9 miners and 3 day men employed. February 23rd, May 25th and October 25th, mine found in good condition.

North Lima.

Situated on the Y. & S. R. R., near North Lima, Ohio. Owned and operated by the Youngstown & Southern Ry. Co., Youngstown, Ohio. E. G. Biddison, same place, has full charge. Shaft opening, 70 feet in depth, into the No. 3-A seam, 28 inches thick; fan ventilation and worked on the room and pillar system. February 23rd and May 25th, very little work had been done at this mine. October 4th, visited and found mine abandoned.

Lowellville.

Located near Lowellville, Ohio. Operated by Lowellville Coal Mining Co., Youngstown, Ohio. Richard Rollands, Hubbard, Ohio, has full charge. Shaft opening, 75 feet, into the No. 1 block seam, which is from 2½ to 4 feet thick; fan ventilation; worked on single entry system; mule haulage; 18 miners and 5 day men find employment. Three visits made. February 22nd, former orders complied with. Found traces of gas in No. 3 room in No. 1 entry; ordered a breakthrough. May 24th, visited and found indefinitely suspended. October 4th, found mine in operation after a suspension of five months. A full complement of men are not as yet employed as will be within a short time. Conditions fair.

McKinley.

Located near Beloit; remained suspended throughout the year.

Fisk.

Located near Canfield, Ohio, on the Erie R. R. Operated by Mahoning & L. E. Coal Co., Calla, Ohio. Earl McCartney, same place, has full charge. Slope opening, 215 feet in length, to the cannel seam of coal, which is 3½ to 4 feet thick; employs 12 miners and 7 day men; exhaust steam ventilation. October 6th, visited this mine and was informed by Mr. McCartney that it had been in operation about 40 years ago. There being no demand for this kind of coal at that time, it was abandoned. He also told me they had a large territory of coal, and it was the intention of the company to operate it on a large scale, as they have a good demand for the coal, the only drawback being the scarcity of men. Conditions fair.

Brown.

Located near North Lima, Ohio. Operated by John Kelly, R. R. No. 3. Poland, Ohio. Employs 5 miners and 3 day men.

Paulin.

Located near North Lima, Ohio. Operated by E. Paulin, R. R. No. 3. Poland, Ohio, who has full charge. Drift opening, into the No. 3-A seam; employs 5 miners and 2 day men. Conditions fair.

Beaver.

Located near North Lima, Ohio. Operated by R. M. Hunter, R. R. No. 3, Poland, Ohio, who has full charge. Shaft, 52 feet, No. 3-A seam. 2½ feet thick;

exhaust steam ventilation; employs 6 miners and 2 day men. New mine. On my visit found ventilation deficient in No. 2 entry; ordered a breakthrough cut, which will improve the ventilation.

Spalt.

Situated near North Lima, Ohio. Operated by the Spalt Coal Co., R. R. No. 3, Poland, Ohio. A. Pecoek, Poland, Ohio, has full charge. Shaft, 71 feet deep, No. 3-A seam, $2\frac{1}{2}$ feet thick; natural ventilation; employs 5 miners and 1 day man. October 6th, found in fair condition.

OTTAWA COUNTY.

American No. 1.

Situated on the L. S. & M. S. R. R., near Gypsum, Ohio. Operated by the American Gypsum Co., Port Clinton, Ohio. Arthur Chase, same place, has full charge. Shaft, 42 feet deep, into the gypsum seam, which is from 5 to 6 feet thick; fan ventilation; employs 28 drillers, 40 loaders and 28 day men. Four visits made. March 11th and July 7th, conditions good. August 15th, inspected in company with Chief Inspector of Mines, Geo. Harrison and District Inspector Thos. Morrison, and found in excellent condition. November 24th, mine was in compliance with law.

Consumers No. 2.

Remained suspended throughout the year.

Lea or No. 1 East.

Located near Gypsum, Ohio, on the L. S. & M. S. R. R. Operated by the United States Gypsum Co., Chicago, Ill. Erhard Holm, Gypsum Ohio, has full charge. Shaft, 50 feet, into the Gypsum seam, from 6 to 8 feet in thickness; natural ventilation, the fan having been removed to another mine. Employs 8 drillers, 12 loaders and 10 day men. Four inspections made: March 9th, July 6th and August 16th, mine in good condition. November 23rd, while making inspection of the mine found two men removing a pillar; the place was not safe, and ordered it stopped until securely timbered.

No. 1 North.

Situated near Gypsum, Ohio, on the L. S. & M. S. R. R. Operated by same company as No. 1 East, and under same supervision. Drift opening, into the gypsum seam, 5 feet thick; fan ventilation. Five visits made: March 10th, mine in good condition. May 11th, called to investigate accident of John Demo, who was killed by returning to shots. July 6th, found ventilation deficient at the face of main entries; ordered two breakthroughs closed, a door erected; and a stairway built in the second opening. August 17th and November 2nd, former orders complied with; mine in fair condition.

No. 2 West.

Located near Gypsum, Ohio. Operated and under the same supervision as No. 1 East and No. 1 North. Drift opening, into the gypsum seam, 5 feet thick;

ventilated by fan; employs 2 drillers, 6 loaders and 3 day men. Three visits made. March 10th, ventilation deficient in No. 2 entry; ordered a breakthrough cut; aside from this, conditions were fair. July 6th and November 3rd, mine was flooded with water and suspended indefinitely.

No. 3 West.

Located near Gypsum, Ohio. Operated and under the same supervision as the former mines. Drift opening, into gypsum seam, 5 feet thick; fan ventilation; employs 14 drillers, 16 loaders and 8 day men. Four inspections made. March 9th and July 6th, found in good condition. August 16th and November 23rd, in compliance with the mining laws.

PORTAGE COUNTY.

Hutson No. 4.

Located near Deerfield, Ohio, on the L. E. A. & W. Ry. Owned and operated by the Hutson Coal Co., Cleveland, Ohio. T. J. Williams, Lloyd, Ohio, superintendent. J. P. Williams, Deerfield, Ohio, mine foreman. Shaft, 214 feet, entering the No. 1 or Palmyra seam of coal, which is from 3½ to 4 feet thick; worked on single entry system; fan ventilation. Five visits made. March 16th, considerable repairs had been made by Mr. Williams, improving the haulage way, and resetting timbers along the main entries, for which he deserves credit. March 19th, called to investigate fatal accident to Evan Richards, who was electrocuted by coming in contact with a live wire. The alternating current used in this mine carries about 500 volts. June 22nd, September 21st and December 21st, mine in good condition. Employs 28 pick miners, 6 cutters, 36 loaders and 40 day men.

Hutson No. 8.

Situated on L. E. A. & W. Ry., near Lloyd. Owned and operated by Hutson Coal Co., Cleveland, Ohio. T. J. Williams, Lloyd, Ohio, superintendent. R. Lewis, same place, mine foreman. Shaft opening, 130 feet deep, No. 1 seam of cannel coal, which is of an extra fine quality, and is 4 feet thick. Fan ventilation; worked on single entry system; 60 miners and 24 day men employed. Four inspections made. March 18th, on arriving at this mine, learned that a gas explosion had occurred on Monday morning, the 15th, in which R. Lewis, mine foreman, Edw. Miller and John Swanson, road men, had been severely burned. The mine had remained idle from the time of the explosion until my investigation, which was in company with John Phillips, fire-boss. A thorough examination was made of the mine, no traces of gas being found. This mine generates small quantities of gas when approaching faults, but if properly taken care of no accidents will occur. June 24th, conditions good. September 22nd, in looking over the fire-bosses' report, noticed that traces of gas were marked up in No. 5 room in No. 1 entry for September 21st. In visiting this place no gas was found. December 20th, in good condition.

Mullins.

Located near Deerfield, Ohio, on the L. E. A. & W. R. R. Operated by the South Palmyra Coal Co., Cleveland, Ohio. J. S. Davis, Deerfield, Ohio, superin-

tendent. Thos. Davis, Deerfield, Ohio, mine foreman. Shaft, 225 feet deep—penetrating the No. 1 or Palmyra seam of coal, from 3 to 4 feet thick; fan ventilation; worked on the single entry system; 23 pick miners, 12 cutters, 37 loaders and 30 day men employed. Four inspections made. March 17th, former orders complied with. Ventilation deficient in No. 3 entry, north side. June 23rd, found the force of miners had been reduced, owing to the slackness of the coal trade; 14 miners were engaged in driving entries. The miners were dividing the work with one another. Conditions were good. September 23rd, ventilation deficient in No. 3 entry, north side. Ordered two breakthroughs closed. December 22nd, former orders complied with; mine in good condition.

Strong.

Situated near Atwater, Ohio. Owned and operated by the Strong Bros. Coal Co., R. R. No. 14, Atwater, Ohio. W. A. Strong has full charge. Shaft opening, 31 feet deep, entering the No. 4 seam, which is 3 feet thick; fan ventilation; employs 9 miners and 2 day men. Two inspections made. September 20th, mine in good condition. December 23rd, while making inspection, the miners complained of the oil furnished. Examined it after going out of the mine, and found it to be of a very poor quality. Notified Mr. Strong to cease using this oil, and to purchase a better quality, which he agreed to do.

Beveridge.

Located near Atwater, Ohio. Operated by J. Wilson, R. R. No. 14, Atwater, Ohio, who has entire charge. Shaft opening, 31 feet, entering the No. 4 seam of coal, 3 feet thick; ventilated by exhaust steam; single entry system; employs from 5 to 8 miners and 1 day man. Two visits made. September 20th, visited and found idle. December 23rd, mine in good condition.

Black Diamond.

Located near Lloyd, Ohio. Operated by the Black Diamond Coal Co., Lloyd, Ohio. Thos. Jones, same place, has full charge. Shaft opening, 90 feet, into the No. 1 seam or Palmyra block, 2½ feet thick; exhaust steam ventilation. September 6th, found 6 men engaged in driving entries. Conditions fair. Ordered cover on cage and gates on top of shaft; also second opening.

Y. & O.

Was worked out and abandoned during the year.

STARK COUNTY.

Fox No. 12.

Located near Navarre, Ohio, on the W. & L. E. R. R. Operated by the Massillon Coal Mining Co., Cleveland, Ohio. Wm. Baumgartner, Sr., superintendent. Wm. Baumgartner, Jr., mine foreman. Both of Massillon, Ohio. Shaft opening, 200 feet deep, entering No. 1 seam of coal, 5 feet thick at this point. Double entry system; fan ventilation; motor and mule haulage; 40 pick miners, 6 cutters, 30 loaders and 36 day men employed. Five visits made. February

18th, former orders complied with; mine in good condition. April 26th, found traces of gas in No. 3 entry, north side. Tested safety catches, and found No. 1 cage in bad condition; notified the mine foreman, also the engineer, to allow no person or persons to ride on this cage until it was repaired. No. 2 cage was in good condition. July 13th, former orders were complied with. October 19th, ventilation deficient in No. 2 entry, north side. The day men were putting in a brattice. When completed, conditions will be improved. Found speaking tube was out of commission; ordered it repaired. December 13th, former orders complied with; ventilation deficient on north side of the mine; ordered door repaired and air course cleaned out. The mine foreman agreed to comply with the orders.

Geise No. 13.

Situated near Stanwood, Ohio, on the B. & O. R. R. Operated by the Massillon Coal Mining Co., Cleveland, Ohio. Wm. Baumgartner, Massillon, Ohio, superintendent. Wm. Moffit, Massillon, Ohio, mine foreman. Shaft opening, 200 feet deep, No. 1 seam, 5 feet thick; double entry system, fan ventilation, and employs 40 miners and 16 day men. Four visits made. February 5th and April 2nd, mine in good condition. August 30th, found suspended for about 3 months; several of the brattices and a trap door required repairing; ordered them repaired. November 8th, former orders complied with and mine in good condition for pillar work.

No. 17.

Situated near West Brookfield, Ohio, on the W. & L. E. R. R. Owned and operated by the Massillon Coal Mining Co., Cleveland, Ohio. Wm. Baumgartner, Massillon, Ohio, superintendent. Patrick H. Harney, same place, mine foreman. Shaft opening, 225 feet, No. 1 seam, 5 feet thick; fan ventilation, double entry system; employs 50 miners and 20 day men. Five visits made. February 17th, April 27th, ordered check door erected in the tunnel entry and breakthrough cleaned out in No. 3 entry. June 29th, former orders complied with. Noticed one of the large timbers at the bottom of the shaft was broken. Ordered it replaced with a new one. September 8th, former orders complied with; ventilation deficient in No. 4 entry; ordered check door repaired and several sets of timber replaced in the tunnel entry. November 29th, former orders complied with; mine in fair condition for pillar work.

No. 18.

Located near Stanwood, Ohio, on the B. & O. Ry. Operated by the Massillon Coal Mining Co., Cleveland, Ohio. Wm. Baumgartner, Massillon, Ohio, superintendent. John Baumgartner, same place, mine foreman. Shaft opening, 200 feet deep, No. 1 seam of coal, 5 feet thick at this point; fan ventilation, double entry system; 53 miners and 18 day men employed. February 4th, pillars being removed. Mine was worked out and abandoned in March.

No. 19.

Located on P. Ft. W. & C. and W. & L. E. Rys., near Sippo, Ohio. Operated by the Massillon Coal Mining Co., Cleveland, Ohio. Wm. Baumgartner, Massillon, Ohio, superintendent. Wm. Moffit, same place, mine foreman. Shaft, 157 feet deep, No. 1 seam of coal, 4 feet thick; double entry system; fan ventilation; employs 39 miners and 13 day men. Two visits. January 29th, visited

for purpose of investigating trouble that had arisen between the miners; learned they had been shooting before their turn, almost resulting in a fatal accident. Notified the miners that they must shoot in their turn; also notified the mine foreman to this effect and to discharge any miner who would disobey the order. March 26th, found former orders being carried out. Mine in fair condition for pillar work.

No. 20.

Located near Canal Fulton, Ohio, on the Pennsylvania R. R. Operated by the Massillon Coal Mining Co., Cleveland, Ohio. Wm. Baumgartner, Massillon, Ohio, superintendent. Daniel Heinbach, Canal Fulton, Ohio, mine foreman. Shaft opening, 214 feet deep, entering the No. 1 seam, 4 feet thick at this point; double entry system; fan ventilation; employs 70 pick miners, 4 cutters, 20 loaders and 28 day men. Four visits made. April 21st, visited and found idle, on account of water being up, and no inspection was made. August 9th, found mine in operation after a suspension of nearly six months; ventilation deficient in No. 2 entry, north side; also in No. 1 entry, south side; ordered two doors put up and two brattices repaired. August 31st, called to make an examination of the scales; tested in company with the mine committee and found incorrect. Made partial inspection of the mine, and found part of former orders complied with; the remaining orders would be complied with in a day or two. November 26th, found John Baumgartner in charge. He had completed the remainder of former orders; conditions fair.

Elm Run No. 5.

Situated on the W. & L. E. Ry., near Elton, Ohio. Operated by the Massillon-Elm Run Coal Co., Cleveland, Ohio. Philip Sonnhalter, Massillon, Ohio, superintendent. Lewis Brenkamp, Navarre, Ohio, mine foreman. Shaft, 110 feet, into the No. 1 seam of Massillon coal, which is 4 feet thick; double entry system, fan ventilation; employs 30 miners and 12 day men. Four visits made. March 24th, found south side of mine idle, owing to the entries encountering difficulties. North side in fair condition. May 20th, learned there was trouble between the company and lessee, causing a cessation of work in a portion of the mine, necessitating the reduction of the working force. While examining the cages, noticed the frames were in bad condition; ordered new ones. July 12th and October 15th, former orders complied with and mine in good condition.

Elm Run No. 7.

Located south of Navarre, Ohio, on the W. & L. E. R. R. Operated by the Massillon-Elm Run Coal Co., Cleveland, Ohio. Philip Sonnhalter, Massillon, Ohio, superintendent. M. Davis, same place, mine foreman. Shaft opening, 214 feet, No. 1 seam, 5 feet thick; double entry, fan ventilation; employs 30 miners and 13 day men. Six visits made. January 28th, visited and found idle. March 22nd, found second opening completed and stairway built. May 19th, a 12-foot Brazil fan had been installed, which is giving good results. July 27th, found considerable bad roof in No. 2 room in No. 2 entry; ordered it retimbered. September 15th, former orders complied with. Ventilation deficient in No. 3 room, No. 1 entry; ordered a breakthrough cut. December 2nd, former orders complied with. Mine in good condition.

Pocock No. 3.

Located near East Greenville, Ohio, on the B. & O. and W. & L. E. Rys. Operated by the Pocock Coal Co., Massillon, Ohio. Wm. Kutz, same place, has full charge. Shaft opening, 245 feet, entering the No. 1 seam of coal, which is 5 feet thick; worked on the double entry system; fan ventilation; employs 80 pick miners, 8 cutters, 24 loaders and 31 day men. Six visits made. February 1st and 2nd, called to test the scales; tested same in company with the mine committee and found them correct. On making inspection, found former orders complied with; ventilation deficient in No. 4 entry, west side, caused by a main door without an attendant. The mine foreman agreed to place an attendant at this door. April 23rd and June 28th, conditions good. September 14th and 16th, found a number of the main entries retimbered, which improved conditions. October 16th, called to this mine by Superintendent Wm. Kutz and mine committee. Some trouble existed on account of approaching New Greenville No. 3 mine, which is abandoned and filled with black damp. On account of the ventilation being deficient, it was considered dangerous to break into the old workings. Mr. Kutz wanted to drive an entry about 200 feet, working it night and day. This work when completed would produce about 15,000 cubic feet of ventilation per minute. The miners objected to this work being done on idle days, and Mr. Gorman, district president, was called, and advised according to the agreement between the miners and operators that no coal could be mined on idle days, but said if the Mining Department gave the company permission to work this place for the safety of the miners' lives, he could not interfere. After the matter was explained in detail to the mine committee they were satisfied. Notified Mr. Kurtz to proceed with the work. December 9th and 14th, found work completed which was ordered on former visit; 12,000 cubic feet of air is now passing into the old workings of the abandoned mine and coming out of the second opening, which makes it safe as far as damps are concerned.

Hipp.

Located near Newman, Ohio, on the Pennsylvania Ry. Operated by the Massillon Stone & Fire Brick Co., Massillon, Ohio. S. J. Preece, R. R. No. 1, Massillon, Ohio, has full charge. Drift opening into the clay seam, 5 feet thick; furnace ventilation; employs 2 drillers, 8 loaders and 4 day men. Four visits made. February 19th, June 3rd, July 28th and November 1st. Mine in good condition.

Sippo No. 2.

Located near North Lawrence, Ohio, on the Pennsylvania R. R. Operated by The Everhard Company, Massillon, Ohio. John Yast, same place, has entire charge. Drift opening into the clay seam, 5 feet thick; furnace ventilation; employs 12 miners and 2 day men. Four visits made. February 19th, found in good condition. June 3rd, ventilation deficient in No. 2 entry; there were a number of breakthroughs in need of repairs; ordered them repaired. July 16th, former orders complied with. November 1st, mine in good condition.

McGinty.

Located near Louisville, Ohio, on the Pennsylvania Ry. Operated by the Louisville Brick & Tile Co., Louisville, Ohio. Edw. Wolfe, Louisville, Ohio, has full charge. Drift opening into the No. 6 seam of coal and clay; coal, 3 feet,

clay, 6 feet thick; furnace ventilation; single entry system; employs 30 miners and 10 day men. Three visits made. March 31st and June 17th, mine in good condition. October 26th, ventilation deficient in No. 2 entry; ordered a breakthrough cut. Aside from this, conditions were fair.

Taggart No. 3.

Located near Navarre, Ohio, on the B. & O. R. R. Operated by the Taggart Coal Co., Massillon, Ohio. E. J. English, same place, has full charge. Shaft opening, 135 feet deep, entering the No. 1 seam of coal, 4 feet thick at this point; fan ventilation; double entry system; employs 41 miners and 16 day men. January 25th, called to investigate fatal accident to Anglo Roberts, who was injured January 9th, by fall of stone at the face of his room, and died January 22nd. March 4th, former orders complied with. Mine in fair condition. Tested scales and found correct. June 1st and August 10th, mine in good condition. October 18th, in good condition. Tested scales; found incorrect.

Summit Hill.

Located near Greentown, Ohio, on the B. & O. Ry. Operated by Mrs. L. E. Smith, Greentown, Ohio. Peter Dearhoff, same place, has full charge. Drift opening, entering the No. 4 seam of coal, 5 feet thick, including a strata of stone in the center, which varies in thickness from 2 to 4 inches; furnace ventilation; single entry system; 14 miners and 4 day men employed. Three visits made. February 3rd, in good condition. Tested scales and found correct. April 29th and October 27th, mine found in compliance with the law.

Willow Grove.

Located near West Brookfield, Ohio. Domestic mine. Operated by the Willow Grove Coal Co., R. D. No. 1, Massillon, Ohio. C. F. Smith, same place, has full charge. Shaft opening, 147 feet deep, entering the No. 1 seam of coal, 3½ feet thick; fan ventilation; worked on double entry system; employs from 6 to 10 miners and 4 day men; two visits made. August 27th, found ventilation deficient in No. 2 room. Had it stopped until No. 1 room was driven up, where a breakthrough could be cut. December 8th, former orders complied with. Ordered air course cleaned out. Aside from this, conditions were fair.

North Berlin.

Located near New Berlin, Ohio. Operated by G. F. Smith Coal Co., New Berlin, Ohio. F. Smith, same place, has full charge. Shaft, 40 feet deep, into the No. 5 seam, 5 feet thick, including a strata of stone in the center about 3 inches thick; furnace ventilation, and employs 12 miners and 3 day men. Three visits made. February 12th, ventilation deficient in No. 2 entry; ordered a brattice repaired and door put up. May 17th and October 8th, former orders complied with. Mine in good condition.

Wise.

Remained suspended throughout the year.

West Brookfield.

Located near W. Brookfield, Ohio. Operated by Peter Busse, Massillon, Ohio. Drift, into the No. 1 seam; employs from 4 to 8 miners. December 8th, mine found in fair condition.

Lahmiller No. 1.

Located near Waco, Ohio. Domestic mine. Operated by J. G. Lahmiller, R. D., Canton, Ohio, who has full charge. Drift opening, into the No. 6 seam, 3 feet thick; furnace ventilation; employs from 10 to 15 miners and 2 day men. Two visits made. May 3rd, former orders complied with. Ventilation deficient in No. 1 entry; ordered curtain which was being used replaced by a door. August 2nd, former orders complied with. Mine in good condition.

N. F. P. No. 1.

Located on the W. & L. E. Ry., near Osnaburg, Ohio. Operated by the National Fireproofing Co., Canton, Ohio. John Murley, same place, is superintendent. Albert Hale, Osnaburg, Ohio, mine foreman. Drift opening, into No. 6 seam of coal, 3 feet thick; furnace ventilation; double entry system; 23 miners and 10 day men employed. Three visits made. February 8th, mine in good condition. May 6th, ventilation deficient in this mine, caused by the wet weather; the ditches being unable to carry the water, caused it to flood the furnace, putting it out of commission. A new furnace which was being built would be completed ready for use in a few days. August 5th, new furnace in use and mine in good condition.

N. F. P. No. 2.

Remained suspended throughout the year.

Tunnel.

Suspended throughout the year.

Whittacre No. 5.

Located on the Pennsylvania Ry., near Waynesburg, Ohio. Operated by the Whittacre Fireproofing Company, Waynesburg, Ohio. A Burwell, same place, has full charge. Drift opening, into No. 5 seam of coal, 3 feet, clay, 6 feet thick; furnace ventilation; 13 miners and 6 day men employed. Three visits made. February 10th, former orders complied with; ventilation deficient at the face of No. 3 entry; ordered it stopped until a breakthrough was cut; also ordered three brattices repaired, and a number of posts set along the main entry to support the coal where the clay had crumbled. May 4th, former orders complied with; mine in fair condition. August 3rd, visited and found idle.

Whittacre No. 6.

Located near No. 5 mine, on same railroad and under same supervision as No. 5. Drift opening, into No. 6 seam of coal and clay; coal 3 feet and clay varying from 5 to 7 feet thick. Furnace ventilation. Three visits made. February 10th and May 4th, mine in good condition. August 3rd, found scarcity

of timber at this mine. Notified mine foreman, also the company, that a supply of timber must be kept on hand at all times. The company agreed to comply with the order; 22 miners and 15 day men employed.

Indian Run.

Situated on a branch of the W. & L. E. Ry., 5 miles south of Osnaburg. Operated by the Steiner Coal Co., Canton, Ohio. David Carl, Osnaburg, Ohio, has full charge. Drift opening, entering the No. 6 seam of coal, from 3 to 3½ feet thick; furnace ventilation, double entry system. Rope and mule haulage. Three visits made. February 9th, mine in good condition. May 7th and August 2nd, suspended indefinitely; employs 32 miners and 10 day men.

Keim No. 1.

Located near Mapleton, Ohio, on the W. & L. E. Ry. Operated by the Keim Brick & Tile Co., Louisville, Ohio. Geo. Hoover, Osnaburg, Ohio, has full charge. Drift opening, into the No. 6 seam; coal 3 feet, clay 6 feet; furnace ventilation, and employs 8 miners and 2 day men. Four inspections made. February 11th and May 5th, mine in good condition. May 10th, called to test scales; tested in company with the miners and found correct. August 4th, while making inspection of this mine found main door standing open. There are Italian drivers in this mine, and they neglect the doors. Gave orders that the doors must be attended to, and not neglected in this manner, to interfere with the ventilation.

Keim No. 2.

Located near No. 1, on the same railroad. Operated by the same company. Geo. Hoover, Osnaburg, Ohio, has full charge. Drift opening, into No. 6 seam; coal 3 feet, clay 6 feet thick; furnace ventilation; employs 7 miners and 3 day men. Three visits made: February 11th, May 5th and August 4th. On each visit mine was found in compliance with the mining law.

Robertsville.

Remained suspended throughout the year.

Empire.

March 31st, visited and found idle. Mine suspended indefinitely.

Edgefield.

Located near Edgefield, Ohio. Operated by Silver Creek Coal Co., New Berlin, Ohio. R. Allen, same place, superintendent. Edw. Russell, Canton, Ohio, mine foreman. Slope, 150 feet in length, entering the No. 4 seam, which is 4 feet thick, including a strata of stone in the center. Ventilated by exhaust steam; employs 8 miners and 3 day men. Three visits made. March 5th, former orders complied with; mine in good condition. June 16th, ventilation deficient in No. 2 entry, exhaust pipe being 25 feet up the air shaft. Suggested that this pipe be taken off and have the pump exhaust at bottom of the shaft. December 1st, former suggestions proved a success by increasing the ventilation. Mine in good condition.

C. H. B.

Remained suspended throughout the year.

Canton Sparta Clay.

Located near Sparta, Ohio, on the B. & O. R. R. Operated by the Canton Sparta Clay Co., Mineral City, Ohio. Jas. Hutchinson, Sandyville, Ohio, has full charge. Drift opening, into the clay seam, which is 6 feet thick; furnace ventilation; employs 5 miners and 4 day men. April 20th, former orders complied with. Pillars are being removed; conditions good.

Fox Run.

Located near North Industry, Ohio. April 20th, visited this mine and learned that J. P. Jones had leased and operated it about three days. There were no employes at the mine. However, went into the mine and made a partial inspection. The furnace not being in use, no measurements of ventilation were taken. Has not resumed operation since last visit.

Sonnhalter.

Located near Canton, Ohio. Operated by Sonnhalter Coal Co., Massillon, Ohio. Geo. Bullock, same place, has full charge. Shaft opening, 60 feet in depth, entering the No. 4 seam of coal, which is $4\frac{1}{2}$ feet thick; ventilated by exhaust steam, and worked on double entry system; employs 2 cutters, 5 loaders and 3 day men. Three visits made. March 5th and June 16th, mine found in fair condition. December 17th, second opening had been reached. The water was about all pumped out. Ordered stairway built in second opening.

Massillon Crystal.

Located near Crystal Springs, Ohio, on the Pennsylvania R. R. and B. & O. R. R. Operated by Massillon Crystal Coal Co., Massillon, Ohio. Wm. Crookson, same place, has full charge. Shaft, 150 feet, into No. 1 seam of coal, 4 feet thick at this point; double entry, fan ventilation; employs 35 miners and 15 day men. Four visits made. March 12th and June 2nd, found second opening completed, stairway built, fan erected, and mine in good condition. August 23rd, ventilation deficient in No. 1 west entry; ordered breakthrough cut. October 22nd, former orders complied with; mine in good condition.

Booth.

Located near Justice, Ohio. Operated by Booth Coal Co., Navarre, Ohio. B. H. Evans, same place, has full charge. Drift opening, into No. 3 seam, 3 feet thick; furnace ventilation; employs from 6 to 8 miners and 2 day men. Two visits made. January 28th, former orders complied with. Ventilation deficient, caused by the furnace not being in use. Orders were given that furnace must be kept in use when mine was in operation. September 13th, in good condition.

St. Elmo.

Located near Canton, Ohio. Operated by the Johnson Coal Co., Canton, Ohio. L. C. Johnson, same place, has full charge. Drift opening, into No. 4

seam, $4\frac{1}{2}$ feet thick; furnace ventilation; employs from 6 to 10 miners and 2 day men. Visited December 17th; conditions fair.

Massillon City.

Located near East Greenville, Ohio, on the W. & L. E. R. R. Owned and operated by the Massillon City Coal Co., Massillon, Ohio. Wm. Penman, same place, has full charge. Shaft opening, 250 feet, entering the No. 1 seam of Massillon coal, 5 feet thick. Double entry system, fan ventilation; employs 58 miners and 15 day men. Four visits made. April 19th, second opening was being sunk; three shifts were employed from the top and one shift from below, roofing up. Tested safety catches and found them in good working order. Tested scales, correct. June 18th and September 7th, second opening completed; fan erected, stairway built, speaking tube put in, and mine in good condition. December 3rd, found door that was being neglected by a driver, which caused the ventilation to be deficient at times in No. 3 entry; gave orders this door must be attended to.

Orchard Hill.

Located near Minerva, Ohio. Operated by Maggie Carrey, Minerva, Ohio. Geo. Hickenburger, same place, has full charge. Shaft, 20 feet, into the No. 6 seam, which is 28 inches thick; ventilation natural; single entry system; employs from 6 to 10 miners and 2 day men. Two visits made: April 28th and November 5th; mine in good condition.

H. B. Camp.

Located near Aultman, Ohio, on the B. & O. R. R. Operated by H. B. Camp Clay Co., Aultman, Ohio. Edw. Babb, same place, has full charge. Drift opening, in the clay seam, from 5 to 6 feet thick; worked on single entry system and has natural ventilation; employs 10 miners and 2 day men. Visited April 23th and October 27th; found in good condition.

Kester.

Located near Osnaburg, Ohio, on the W. & L. E. R. R. Operated by the Kester Coal Co., Osnaburg, Ohio. Wm. Kester has full charge. Drift opening, into the No. 6 seam of coal, 3 feet thick; natural ventilation; single entry system; employs 14 miners and 2 day men. Two visits made. May 18th, return air course was not large enough; ordered it enlarged. August 11th, former orders complied with; conditions fair.

Massillon City B.

Located near West Brookfield, Ohio. Operated by the Swier & Llewellyn Coal Co., R. R. No. 1, Massillon, Ohio. Wm. Llewellyn, same place, has full charge. Shaft opening, 77 feet deep into the No. 1 seam of coal, 4 feet thick; ventilated by exhaust steam; worked on double entry system, and employs 9 miners and 4 day men. July 9th, found they had just reached the coal; conditions were fair. August 27th, found 7 men engaged in making bottom, timbering and shooting a sump. October 28th, called to test scales. Made test of same in company with mine committee and found correct. December 15th, found them sinking the second opening, which will be completed in about one week.

December 28th, called to investigate death of Jacob Kroft, who was a driver in mine; died of heart failure while in the act of removing an empty car from the cage.

B. & B.

Located near Canal Fulton, Ohio. Operated by Blank & Biller Coal Co., Canal Fulton, Ohio. L. Biller, same place, has full charge. Slope, 156 feet in length, into the No. 1 seam of coal, which is 4 feet thick; ventilated by exhaust steam; 7 miners and 2 day men employed. Two visits made. July 15th, found 4 men engaged in sinking a slope; conditions fair. October 20th, coal had been reached. Seven men were engaged in making the bottom and driving entries. Conditions good.

Sunnyside.

Operated by John Plaskett, North Industry, Ohio. Drift opening, No. 6 seam, 3 feet thick; employs 4 miners and 1 day man.

Bates.

Operated by Wm. Bates, North Industry, Ohio. Drift opening, into the No. 6 seam, 3 feet thick; employs 4 miners and 2 day men.

Eli No. 2.

Operated by Eli Bros., Alliance, Ohio. Shaft opening, 55 feet, No. 3 seam, 3 feet thick; employs 5 miners.

Krunlauf.

Operated by Krunlauf Coal Co., Osnaburg, Ohio. Drift opening, No. 6 seam, 3 feet thick; employs 5 miners.

Fisher.

Operated by D. R. Thomas, Justice, Ohio. Drift, No. 3 seam; mule haulage, and employs 4 miners and 1 day man.

Sheatzley.

Operated by Henry Lahmiller, North Industry, Ohio. Drift, No. 3 seam, 3 feet thick; employs 5 miners.

Cook.

Operated by Wm. Lahmiller, North Industry, Ohio. Drift, No. 6 seam; employs 4 miners.

Fox Run.

Operated by N. Bowman, North Lawrence, Ohio. Slope, No. 1 seam, 4 feet thick; employs 4 miners and 1 day man.

Newman.

Operated by Newman Coal Co., R. R. No. 2, Massillon, Ohio. Slope opening, 75 feet in length, No. 1 seam of coal, 5 feet thick; employs 4 miners and 1 day man.

Harris.

Operated by David Harris, Canton, Ohio. Drift opening, into No. 4 seam, 5 feet thick; employs from 3 to 7 men and 2 day men.

Grotshell.

Operated by A. J. Grotshell, Magnolia, Ohio. Drift, No. 6 seam, 3 feet thick; employs 5 miners and 1 day man.

Lahmiller No. 3.

Operated by J. G. Lahmiller, Canton, Ohio. Drift opening, No. 6 seam, 3 feet thick; employs 3 miners and 1 day man.

Stemwinder.

Operated by Thos. Powell, Massillon, Ohio. Shaft, 28 feet, into the No. 1 seam, 3 feet thick; employs from 3 to 5 miners and 1 day man.

SUMMIT COUNTY.
Turkey Foot No. 2.

Located near Manchester, Ohio, on the C. A. & C. R. R. Operated by the Brewster Coal Co., Akron, Ohio. John White, Barberton, Ohio, has full charge. Slope opening, 340 feet in length, into the No. 1 seam of coal, 4 feet thick at this point; ventilated by fan; double entry system, and employs 50 miners and 16 day men. Three visits made. April 14th, former orders complied with. July 26th and November 16th, on each occasion mine was found in good condition.

Beechwood-Massillon.

Located at Manchester, Ohio, on the C. A. & C. R. R. Operated by the Beechwood-Massillon Coal Co., Cleveland, Ohio. J. J. Williams, R. D. No. 35, Clinton, Ohio, has entire charge. Shaft opening, 140 feet deep, into the No. 1 seam of Massillon coal, 5 feet thick; double entry system; fan ventilation, motor and mule haulage; employs 29 pick miners, 12 cutters, 44 loaders and 36 day men. Four visits made. April 15th, visited and found mine idle; made inspection and found the electric wires were not placed in the proper place; also found machines with no shields. Notified Mr. Williams that shields must be put on the machines before they could be put in operation. May 28th, former orders complied with; mine in fair condition. July 14th, ventilation deficient in No. 1 face entry; ordered two breakthroughs closed; also a door repaired leading to the face entry. September 30th, former orders complied with; ventilation deficient in No. 2 entry; the miners were cutting a breakthrough, which was only 50 feet from the outside breakthrough, where there were 12,800 cubic feet of air passing; the entry raising very rapidly was the cause. Ordered a breakthrough cut in No. 5 or cut-off entry. Aside from this, conditions were fair.

Hametown.

Worked out and abandoned.

Hill.

Located near Mogadore, Ohio, on the W. & L. E. R. R. Operated by Robinson Clay Product Co., Akron, Ohio. Wm. Lilley, Mogadore, Ohio, has full charge. Drift opening, into the clay seam, which is 5 feet in thickness; furnace ventilation; employs from 8 to 12 miners and 2 day men. Was visited February 12th, May 17th, October 8th. On each occasion, mine was in compliance with the mining laws.

Swinehart No. 1.

Suspended indefinitely.

Clinton Shaft.

Operated by the Clinton Coal Co., Clinton, Ohio. Shaft opening, into the No. 1 seam, coal 3 feet; employs from 4 to 7 miners and 2 day men.

Cottage Grove.

Operated by the Cottage Grove Coal Co., R. R. No. 24. Akron, Ohio. Slope opening, 86 feet in length, entering the No. 1 seam, $3\frac{1}{2}$ feet thick; employs from 4 to 8 miners and 2 day men.

Barberton.

Operated by the Barberton Coal Mining Co., Barberton, Ohio. Henry Miner, same place, has full charge. Slope opening, 85 feet in length, into the No. 1 seam of coal, $3\frac{1}{2}$ feet thick; employs from 3 to 5 miners and 2 day men.

WAYNE COUNTY.**West Lebanon No. 2.**

Located near West Lebanon, Ohio, on the C. A. & C. R. R. Operated by the West Lebanon Coal Co., Cleveland, Ohio. Edw. Penman, West Lebanon, Ohio, has full charge. Slope opening, 330 feet in length, penetrating the No. 1 or Massillon seam of coal, 5 feet thick; worked on double entry system; fan ventilation. Five visits made. January 22nd, while making inspection, noticed a dangerous stone at the inside passageway; ordered three sets of timber put up. April 1st, found mine idle; made inspection and found former orders were complied with. July 1st, visited and found idle. September 1st, mine in operation after a suspension of several months. Ventilation deficient in No. 4 room in No. 2 entry; ordered breakthroughs cut; also manholes in the slope cleaned out. November 9th, former orders complied with; ventilation deficient in Nos. 6 and 7 room in No. 2 entry. Miners were cutting breakthroughs, which would be completed in the course of a day or so, and would improve conditions.

Dalton No. 14.

Located near Dalton, Ohio, on the W. & L. E. R. R. Operated by the Massillon Coal Mining Co., Cleveland, Ohio. Wm. Baumgartner, Massillon, Ohio, superintendent. John LaViers, Dalton, Ohio, mine foreman. Shaft opening, 125 feet deep, No. 1 seam of coal, from 3½ to 4 feet thick; double entry system; fan ventilation; 36 miners and 14 day men employed. Four visits made. January 26th, former orders complied with. April 8th, found ventilation deficient in No. 4 entry; miners were cutting a breakthrough, and when completed condition will be improved. June 30th and October 29th, mine in compliance with mining law.

No. 21.

Located near Dalton, Ohio, on the same railroad as No. 14; owned and operated by same company, same superintendent. Geo. Swier, Massillon, Ohio, mine boss. Shaft opening, 157 feet deep, entering the No. 1 seam of coal, from 4 to 5 feet thick; fan ventilation; worked on double entry system; employs 38 pick miners, 4 cutters, 16 loaders and 20 day men. Four visits made. January 27th, former orders complied with; mine in good condition. April 9th, visited and found idle; made inspection of the south side; north side being flooded with water, no inspection made. August 24th, noticed some loose stone near the bottom of the shaft; ordered it taken down or cross-bars put up. Found four machine runners preparing to operate their machines without shields; stopped them, and notified the company that the machines could not be operated until shields were put on, which was complied with. September 24th, called to investigate fatal accident to Richard Edwards, who was injured by fall of slate at the face of his working place, and died the same day from his injuries.

No. 22.

Located about 3 miles south of Dalton, on the W. & L. E. R. R. Owned and operated by the same company as Nos. 14 and 21; same superintendent. Wm. Pollock, North Lawrence, Ohio, mine foreman. Shaft opening, 212 feet deep, into the No. 1 seam of coal, 5 feet thick; worked on double entry system; ventilated by fan. Two visits made: August 25th and December 10th. This is a new mine. On visit, found 12 men engaged in making bottom and driving two entries toward the second opening. The mine generates fire damp; found traces of gas in No. 2 entry, east side. Conditions are good.

No. 23.

Located near No. 22, on same railroad. Owned and operated by same company; same superintendent. Daniel Heinbach, Canal Fulton, Ohio, mine foreman. Shaft opening, 120 feet deep, into the No. 1 seam of coal, 4 feet thick; double entry system, ventilated by exhaust steam; employs 20 miners and 11 day men. Two visits made. August 26th, found 12 men engaged in making the bottom. Conditions fair. December 16th, second opening completed; stairway built. Ordered break put on drum, speaking tube in shaft, and a back-signal installed.

Grute.

Located near North Lawrence, Ohio. Has transportation over the Pennsylvania R. R. Operated by Minglewood-Massillon Coal Co., Cleveland, Ohio. C. A. Kouth, Massillon, Ohio, has full charge. Slope opening, 280 feet, into No. 1

seam of coal, $4\frac{1}{2}$ feet thick; fan ventilation; double entry system; employs 67 miners and 18 day men. Six visits made. January 18th, found they had just completed the bottom and started off two face and two butt entries. March 29th, ordered breakthroughs cut in the main entry; also gob removed from the air course. June 15th, former orders complied with; 33 men were employed in the mine, which was a violation of the mining law, there being no second opening. The number was reduced, in compliance with the law. Found two sets of timber broken in the slope; ordered them replaced by new ones. July 2nd, called to test scales; tested in company with mine committee and found correct. August 12th, former orders complied with; second opening completed, fan erected. Ordered a stairway built; also manholes along the slope. October 21st, former orders complied with. Mine in good condition.

Jones No. 3.

Located near Hametown, Ohio. Operated by J. D. Jones Coal Co., R. R. No. 35, Barberton, Ohio, who has entire charge. Slope, 335 feet, into the No. 1 seam of coal, 4 feet thick; double entry system; ventilated by exhaust steam; employs 10 miners and 3 day men. Three visits made. July 20th, September 17th, found 6 men engaged in sinking a slope. November 17th, found 10 men engaged in driving entries and turning rooms. Ventilation deficient in the face entry; ordered brattice put up.

Terra Cotta.

Located near Fredericksburg, Ohio, on the C. A. & C. R. R. Operated by the Terra Cotta Coal & Clay Co., Fredericksburg, Ohio. A. W. Laughlin, same place, has full charge. Drift opening, into No. 5 seam, $2\frac{1}{2}$ feet thick; natural ventilation, and employs 11 miners and 8 day men. Visited October 11th; ventilation deficient, caused by the return air course being blocked with gob; ordered it cleaned out.

California.

Operated by J. Santrock, Doylestown, Ohio. Employs from 3 to 5 miners and 1 day man; has furnace ventilation.

Gilt Edge.

Owned by A. W. Laughlin, Fredericksburg, Ohio. Drift opening, into the No. 5 seam; employs 4 miners and 1 day man; natural ventilation.

Redett.

Operated by Wm. Redett & Son, Fredericksburg, Ohio. Drift, into the No. 5 seam; employs 4 miners and 1 day man.

Elm Run No. 9.

Located near Clinton, Ohio, on the C. A. & C. R. R. Owned and operated by the Massillon Elm Run Coal Co., Cleveland, Ohio. Philip Sonnhalter, Massillon, Ohio, superintendent. H. Williams, Canal Fulton, Ohio, mine foreman. Shaft opening, 110 feet deep, No. 1 seam of coal, 4 feet thick; double entry system, exhaust steam ventilation; employs 10 miners and 8 day men. Three visits made: July 22nd and September 27th, new mine. On my visit found the coal

had been reached. Ten men were engaged in making the bottom and shooting a sump; ordered second opening, brake on drum, and speaking tube. November 30th, visited this mine for the purpose of learning if former orders had been complied with. On arrival found mine idle until second opening was completed. Part of former orders had been complied with.

Burton City.

Operated by the Burton City Coal Co., Burton City, Ohio. Shaft opening, 65 feet, into the No. 1 seam, which is 3 feet thick; ventilated by exhaust steam. Employs 4 miners and 2 day men.

Doylestown No. 1.

Remained suspended throughout the year.

HOLMES COUNTY.

Bilderback No. 2.

Operated by D. M. Bilderback, Millersburg, Ohio. Drift opening, No. 6 seam; employs 4 men. Natural ventilation.

Uhl Nos. 1 and 2.

Owned and operated by B. Uhl, Millersburg, Ohio. Drifts, into the No. 6 seam, 3 feet thick; employs from 5 to 8 miners and 1 day man; natural ventilation.

Horn.

Operated by John Horn, Killbuck, Ohio. Drift, No. 6 seam; employs 3 miners and 1 day man.

Brooks.

Operated by Wm. Brooks, Millersburg, Ohio. Drift, No. 6 seam; natural ventilation, and employs 4 men.

Chevellard.

Operated by E. H. Chevellard, Millersburg, Ohio. Drift opening, No. 6 seam, 3 feet thick; furnace ventilation; employs 7 miners and 1 day man.

Quillen No. 1.

Operated by the Holmes County Coal & Clay Product Co., Millersburg, Ohio. Drift opening, into No. 4 seam, 4 feet thick; ventilated by furnace; employs 9 miners and 2 day men.

Quillen No. 2.

Worked out and abandoned.

Mast.

Operated by A. A. Echard, lessee, Millersburg, Ohio. Drift, No. 6 seam; natural ventilation; employs 6 miners and 1 day man.

MINES VISITED OUTSIDE OF SEVENTH DISTRICT.

BELMONT COUNTY.

Buckeye.

March 3rd, visited in company with District Inspector Lot Jenkins and found mine idle; made partial inspection. Mr. Jenkins took exception to the wiring of this mine, and suggested that the positive wire be placed further back and the return wire be raised up higher. There were several sets of broken timber, which he ordered replaced by new ones; also ordered guard put around fly wheel and belt. The fan not being in use, no measurements of ventilation were taken. Tested scales in company with the check weighman and a number of the miners and found correct.

JEFFERSON COUNTY.

Elizabeth.

March 11th, visited in company with Chief Inspector of Mines Geo. Harrison and District Inspectors Morrison and Smith, for the purpose of making an investigation of a squeeze that had taken place in Nos. 1 and 2 entries, the squeeze commencing at No. 10 room and extending to No. 17 room. After making a thorough investigation, Mr. Harrison took the matter up with Mr. Cox, superintendent, to devise the best method to take care of it. The miners had made a complaint that in No. 4 room in No. 2 entry, where there was a cave standing. We made an inspection of this room; no traces of gas were found. November 3rd and 4th, received telegram from Mr. Harrison, chief inspector of mines, to assist Mr. Morrison, district inspector, in making an inspection of this mine. A special examination was made of the abandoned workings, where the miners claimed there was standing gas, no traces of gas being found. There was considerable dust distributed along the haulage ways, the cause being the miners loading their bug-dust on top of the cars, which came in contact with the roof, dragging it off. Mr. Morrison suggested that the miners load their dust in the bed of the car; this done, would eliminate a great deal of the danger. He also requested that the haulages be sprinkled. The ventilating system in this mine is excellent.

COLUMBIANA COUNTY.

Big Walnut, McNab and Delmore Mines.

On September 8th, received a telegram from Chief Mine Inspector Geo. Harrison to meet District Inspectors Smith and Morrison at Salem, Ohio, on September 9th, for the purpose of making an examination of the above-named mines. A thorough inspection was made of the said mines and detailed report filed with the chief inspector of mines.

TUSCARAWAS COUNTY.

Huff Run.

September 28th, visited this mine in company with Chief Inspector Geo. Harrison and District Inspector Alex. Smith. Mine found in fair condition.

South Side.

September 28th, visited this mine in company with Chief Mine Inspector Geo. Harrison and District Inspector Smith, at the request of Mr. Holden, the trouble being black damp, forced there from the Huff Run mine, these properties being worked into one another, at so many different places, both parties being responsible for the conditions. Mr. Holden was not present, therefore no definite action was taken.

EIGHTH DISTRICT

LOT JENKINS.

COMPOSED OF A PORTION OF BELMONT COUNTY.

Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio:

Dear Sir:—In accordance with the custom, I herewith submit the annual official report of the Eighth Mining District for the year beginning January 1st, 1909, and ending December 31st, 1909.

The mines along the river front from Powhattan to Bridgeport will only be reported in District No. 8 until May 1st; from then to the close of the year they will be reported by Inspector L. D. Devore, of District No. 10.

Twenty-six permanent improvements were made, as follows: 7 fans, air shafts, 7 other openings, 4 sets of stairs and 2 speaking tubes.

No new mines opened up, and none were suspended during the year.

Work in the forepart of the year was very poor, most all of the mines working slow time, but the past five months showed a decided improvement. The greatest trouble experienced was the lack of railroad cars to keep the mines running.

I regret to report so many fatal accidents to our fellow-craftsmen, 27 in all, from different causes, accounts of which will be found in this report. This number seems exceedingly large from one district, but with the dangerous stone that lays over the No. 8 seam of coal it is strange that more accidents do not happen from falls of stone. From statements made by mine managers, and from my personal experience while visiting mines, it is an ordinary circumstance to find men working under loose stone. The argument may be made by some that management of mines should prosecute men for not properly posting, in order that the number of accidents may be reduced, but what greater punishment could be meted out than death itself, which can be the only result where so much risk is taken with the stone encountered in this seam, but the desire to finish loading a car or to perform some other duty before placing a post or taking the stone down, causes the greatest number of the accidents. The majority of mine bosses and superintendents are continually warning the men in regard to posting, and they especially regret to have any accident happen at the mine where they are in charge.

I have had, during the year, two men arrested for violation of the mining laws: On April 19th, J. P. McLean, employed as fire boss at the Eleanor mine of the Highland Coal Co., made his examination of the mine and found some gas in first west. He did not place any danger signal up as a warning, and permitted men to enter with open lights, resulting in six men being severely burned about the face and hands. At the hearing before Squire J. W. Morrow, at Bellaire, McLean was advised by attorneys to waive examination and allow the squire to bind him over to the grand jury at the September term of court, which was done; McLean furnished the necessary bond. When the grand jury convened in September, three of the men who were injured, and myself, were subpoenaed to appear and testify as to what had occurred on April 19th at the Eleanor mine, but for some cause the jury did not find a true bill against J. P. McLean. The reason is not apparent as to why a true bill was not found against this fire boss. There was no question in my mind but that he was guilty of criminal negligence, but the company, between the time of the accident and the convening of the grand jury, had made satisfactory settlement with the parties who were injured, and just what the other witnesses testified to before the grand jury is not known.

On July 10th, Forest M. Sykes was killed by being caught in the chain of a mining machine at the Knob mine. Mr. Sykes and Elmer Witchey started to work with a machine that was properly shielded. One of the shields became broken some way and they continued to operate the machine contrary to law, with

the result that Sykes lost his life. I had a warrant sworn out for the arrest of Elmer Witchey for operating a machine without shields. He pleaded guilty before Squire J. W. Morrow, at Bellaire, and was fined according to law.

On July 21st, there was an explosion of gas in the Eleanor mine of the Highland Coal Co., at Warnock, Ohio, causing the death of Thos. Sutherin, an American, aged 43. He was employed as superintendent and mine boss. The mine had been idle for a while, and he was keeping up steam and pumping the water from the mine. On the morning of the 21st, he started the fan at a slow speed and went down the air shaft to go to the pump, which was located 600 feet from the bottom of the shaft, evidently with an open lamp, as all the safety lamps were found later in the engine room. A farmer working in an adjacent field, cutting hay, shortly after Mr. Sutherin entered the mine heard a terrific report, and seeing smoke and dust coming out of the shaft, ran down and blew the whistle. Word was phoned at once to Glencoe to the Dellora mine, owned by the same company. The superintendent of Dellora mine and assistant mine boss, with fire boss and a few other men, went to the mine as quickly as possible. Upon entering the mine they discovered doors and stoppings had been blown down. Temporary stoppings were erected, and at about 10:30 a. m., T. D. Sutherin was found close to where the pump was located, lying across the road, dead, evidently having been killed by the force of the explosion. His side was caved in where he was lying on a discharge water-pipe close to the rail.

The following day, July 22nd, with the superintendent of Dellora mine and superintendent of the Raven Coal Co., with some other men from Dellora mine, and myself, the Eleanor mine was entered to ascertain the extent of the explosion and damage to the mine. After building temporary stoppings at about 4 p. m., we were able to go all around the mine. The explosion had torn all the stoppings and doors out in the mine, and on the west and main south entries most of the timbers were blown out. On the east side the force of the explosion was not so severe, and while the accident of Mr. Sutherin was to be regretted, it was fortunate that there were no others in the mine at the time of the explosion, as it would have meant the death of all unfortunate enough to have been in the mine. It does not seem possible that a man placed in charge of the care of others as a foreman would attempt to go in a mine, with an open light, so soon after starting the fan, especially after the occurrence in the mine just three months previous, whereby six men had been severely burned from igniting gas.

Seven visits were made to mines outside of my district in company with the new inspector, L. D. Devore, and two visits to the Steubenville oil field in Jefferson county, where there was great activity in drilling oil and gas wells.

When not otherwise mentioned in my report, it will be the No. 8 seam of coal which is being worked, averaging from 5 to 5½ feet in thickness; mines ventilated by fans, and are principally all machine-mined coal, if not otherwise stated. All mines, with the exception of the small ones, are included in this report.

In conclusion, I wish to say my relations with the Department, management of mines and miners have been of a pleasant nature during the year, and I also wish to thank you for your sound advice and assistance in the discharge of my duties.

Very respectfully yours,

LOT JENKINS, Bellaire, Ohio,
Inspector Eighth District.

December 31, 1909.

BELMONT COUNTY.

Glen.

Located near Glencoe, Ohio, on the B. & O. R. R. Operated by the Belmont Coal Mining Co., Pittsburg, Pa. Slope opening, 100 feet long. John McMillen, superintendent. E. T. Jones, mine boss. Both of Glencoe, Ohio. Employs 224 miners and 68 day hands. Seven visits made; two to investigate fatal accidents. January 16th, investigated fatal accident of Chas. Wiles, aged 23, American, who was caught in mining machine chain on January 14th, and died on the 15th, while the doctors were operating on him. He attempted to cross over cutter head between motor box and coal, and bits on chain caught his clothing and pulled him in against the coal, cutting off both his legs. There was no shield on the machine when the accident happened. Had visited the mine December 28, 1908, and was informed by the management that shields had been provided for all machines, and they would be placed on the machines at once. With the exception of two, all machines had been properly shielded. On June 25th, investigated fatal accident of John Lenden, age 14 years and 7 months, a trapper boy. The driver's mule was stalled, pulling a loaded car out from 33rd room on 2nd east butt entry, close to where the boy was trapping. The boy went in the room, and just as he was going to pass by the car the mule started, squeezing him between post and car, breaking his neck. Other visits were to inspect the mine on March 1st, May 19th, August 2nd, September 13th and October 28th. The mine is usually in fair condition, with exception of the traveling way to second opening, in which so many falls occur that it obstructs the air, making an extra pressure on the stoppings; those stoppings are being renewed with brick and cement at the request of the Department, which will improve ventilation along working faces. On September 13th, the ventilation had fallen back; requested that one or two men be put to work putting in brick or cement stoppings, and to continue until they were up to ninth east entry.

Black Diamond.

Located at Neff, Ohio. Operated by the Belmont Coal Mining Co., Pittsburg, Pa. E. H. Lace, Bellaire, Ohio, superintendent. Lawrence Gardner, Neff, Ohio, mine boss. Drift opening, employing as large a number as 238 miners and 60 day hands, but on last visit only 181 miners and 59 day hands were at work. This mine has been visited several times during the year. The ventilation in forepart of year was poor. On March 15th, in company with Chief Inspector Geo. Harrison, a meeting was held with General Manager T. K. Maher, of the company, whereby they were to install another fan within 30 days. This was done, and it improved the mine as far as ventilation was concerned. August 11th, was called to the mine by Mr. Lace, the superintendent. There was a squeeze on a portion of the mine, causing the loss of considerable territory for the time being until it could be worked around with other entries; this reduced the working force considerably. On October 8th, ventilation was poor on 5th and 6th west entries. They had cleaned up through the squeeze; the main air course leading from the inlet shaft had been affected by the squeeze and had fallen in in several places. Requested improvement in those entries. Men employed cleaning out the air course. On December 8th, again visited. The mine had connected up with an old shaft opening on 12 west,

making inlet opening and traveling way out for that section of the mine. Ventilation was not good on 3 and 4 and 5 and 6 west. Suggested that a place be driven narrow from 6 west to 7 west, and not to employ any more men in those entries than were then employed, until a place was driven through from 6 to 7 west. The management willingly complied with my request. Transportation, B. & O. and W. & L. E.

Knob.

Located $1\frac{1}{2}$ miles west of Bellaire, Ohio. Operated by the Bakewell Coal Co., Bellaire, Ohio. J. H. Pearsall, Bellaire, Ohio, superintendent and mine boss. Drift opening, employing 103 miners and 26 day men. Ventilated by furnace. Eight visits made, two to investigate fatal accidents, both of which were reported in the usual way. The other visits were for inspections, and, generally speaking, the mine was found in fair condition, excepting on December 14th, the ventilation on 1 and 2 west and faces of those two entries was not satisfactory. Requested it improved. Returning on December 31st, found it somewhat improved, but the mine is becoming too extensive to ventilate with the present furnace. Suggested a fan installed, and while there on December 31st, the management said they were going to put in a fan. Some of the trolley wires are not the required distance outside of rail, but the road is so close to the same rib where trolley wire is hung that there is plenty of room to travel on the opposite side from wires. Informed the management road must be kept over far enough so wire could be placed the required distance from rails. Transportation, B. & O. R. R.

Buckeye.

Located $2\frac{1}{2}$ miles west of Flushing, on the C. L. & W. R. R. Operated by the Harrison Mining Co., Holloway, Ohio. Drift opening, employing 31 miners and 14 day men. Five visits made. March 3rd, in company with Inspector W. H. Miller, of the 7th District. Upon arriving at the mine found it idle and the fan not in operation, and only the motor road was inspected. June 2nd, ventilation on south side of mine was not satisfactory, considerable black damp permeating the air, coming from the old workings. Requested the men sent out from that side of the mine and ordered stoppings put in along old workings; also fan to be started earlier in the morning. August 3rd, in fair condition. October 13th, in fair condition. Ordered some doors on south side in place of curtains. December 22nd, fan had been reversed, bringing the air in at the opening close to working faces, and while the volume of air along working faces was not as great as formerly, it was more pure and free from any foul air. June 25th, scales were tested; found correct. Wm. Harrison, Holloway, Ohio, superintendent. Jno. Harrison, same place, mine boss.

Taggart.

Operated by the Barton Coal Co., Cleveland, Ohio. Geo. Green, St. Clairsville, Ohio, superintendent. Jabez D. Goulding, same place, mine boss. Drift opening, employing 77 miners and 28 day men. Five visits made. March 10th, in fair condition, excepting wiring. The miners were also not supplied with the proper kind of tamping tools. May 28, found some of the machines not properly shielded, shields having been put aside by some machine runners. Also requested more manholes made along one of the motor lines. July 27th,

former orders complied with. Wire in better condition; shields on machines, and all miners using proper tamping tools. October 6th, in fair condition. November 30th, ventilation was not very good; there had been a large fall in the return airway, but men were put to work at once cleaning it up. Mine located on branch of the C. L. & W., from Barton to St. Clairsville.

Victor.

Located near Bannock, on the C. L. & W. R. R. Operated by the Bannock Coal Co., Akron, Ohio. Shaft, 33 feet deep, employing 20 miners and 9 day men. Geo. W. Selway, Bannock, superintendent and mine boss. Only one visit was made to the mine during the year, the mine being suspended since the first of April. April 12th, in poor condition. There is exceptionally tender roof in this mine.

Suburban Brick.

Fire clay mine, located at Bellaire, Ohio. Operated by Suburban Brick Co., Wheeling, W. Va. Employs 10 men. C. H. Carpenter, Martins Ferry, Ohio, is in charge. May 11th, in company with Inspector L. D. Devore, visited mine by request of Chief Inspector Geo. Harrison, to investigate whether large quantities of explosives were stored in the mine. The explosives were found kept in locked boxes, not more than 25 pounds in any one box, each box at least 100 feet apart. One man does all the handling of explosives. Mine was in fair condition, and no safer method for taking care of the explosives could be suggested.

Pultney.

Located just south of Bellaire, Ohio. Operated by Cambria Mining Co., Toledo, Ohio. Transportation, C. & P. R. R. T. H. Huddy, superintendent. W. H. Boring, mine boss. Both of Shady Side, Ohio. Slope, 290 feet long. Visited March 4th and 5th, and found in fair condition, but mining machines were not properly shielded, and very few of the miners were supplied with the right kind of tamping tools. Ordered mine boss to have machines stop running until properly shielded, which was done; also notified miners that they must provide themselves with the copper tamping tools, or they would not be allowed to continue working in the mines of this state. March 29th, was called to investigate fatal accident, which was reported. This mine will be under the supervision of L. D. Devore, in District No. 10, from May 1st to December 31st, 1909.

Nail Mill.

Located at Bellaire, Ohio. Operated by the Carnegie Steel Co., Pittsburg, Pa. Transportation, C. & P. R. B. F. Marling, Bellaire, Ohio, superintendent and mine boss. Drift opening, employing 22 miners and 7 day men. Two visits made. April 16th mine in good condition and well taken care of. May 31st, in company with Inspector L. D. Devore, investigated fatal accident.

Captina.

Located at Captina, Ohio, on the Ohio River & Western R. R. Operated by the Captina Coal Co., Armstrong Mills, Ohio. Wm. Rankin, same place, superintendent and mine boss. Shaft, 68 feet deep, employing 26 pick miners and 6 day hands. Mine generally found in fair condition, and has been in

operation for a great number of years. In consequence, the boilers are not located the required distance from the hoisting shaft, but the law when enacted only provided for any new mines being opened after its passage. The mine generates some gas, and is inspected every morning by a fire boss before men are allowed to enter.

Columbia.

Located at Fairpoint, Ohio, on the C. L. & W. R. R. Operated by the Columbia Coal Co., Akron, Ohio, but at close of year the name of company was changed to Akron Coal Co., Akron, Ohio. D. W. Selway, Fairpoint, Ohio, superintendent. Ira Watkins, St. Clairsville, Ohio, mine boss. Drift opening, employing 179 miners and 39 day men. Five visits made. January 20th, ordered wires put farther back from rails and kept closer to roof. May 25th, found wire placed as requested and in fair condition, excepting the escapement way. This was ordered put in better condition, the management willingly agreeing to have it made satisfactory. August 19th and September 28th, mine was in fair condition; December 15, in fair condition and good readings of air were obtained in last breakthroughs of entries, but the amount of air entering the mine was not up to the standard required by law for the number of men employed on the inside. Had the fan speeded faster, and requested that it be kept at that speed.

Big Run.

Located near Dillies Bottom, Ohio, on the C. & P. R. R. Operated by the J. W. Gorrell Coal Co., Alliance, Ohio. This mine was reported in 1908 as Eastern Ohio Coal Co. Slope, 420 feet long, employing 18 miners and 8 day men. Visited January 28th. Mine in good condition, excepting no stairs in the air shaft. Ordered stairs put in. March 8th, stairs were being placed in shaft. Requested refuge hole made at bottom of slope for the man attending to cable, in case of runaway trip on slope. May 10th, in company with Inspector L. D. Devore found mine in fair condition, excepting the stairs that had been constructed in the air shaft, which were built of too light a material, on account of which we were unable to approve of them, and ordered them made more secure and safe. During my period of inspection of this mine, D. B. Brooks, of Bellaire, Ohio, was superintendent and D. C. Morris, same place, mine boss.

Clifford.

Located at Dillies Bottom, on the C. & P. R. R. Operated by the Fort Pitt Coal Co., Pittsburg, Pa. A. G. Leonard, Moundsville, W. Va., superintendent. F. B. McKinney, same place, mine boss. Slope, 420 feet long. Greatest number employed during my time of inspection was 46 miners and 16 day men. Five visits made—three during the time mine was included in district No. 8, and two since it was transferred to district No. 10. February 18th, in fair condition; stairs had been erected in the new air shaft. April 15th, investigated fatal accident to F. B. McKinney, the mine boss. May 10th, with Mr. L. D. Devore, inspector Tenth District, examination of the mine was made and found in fair condition. As there was no map of the old territory, advised main west entries driven in advance of 3 and 4 west, or bore holes kept drilled ahead of 3 and 4 west, on account of there being some territory from the old mine somewhere ahead. In company with Chief Inspector Geo. Harrison, Inspectors L. D. Devore, Tenth District, and Thos. Morrison, Ninth

District, we visited the mine by request of the management for a conference in regard to placing an additional steam boiler, as the present boiler was too close to the slope opening. Unfortunately, there is a bad situation at the mine, the Ohio river being located on one side of the boiler room and C. & P. R. R. on the other side. An agreement was reached whereby the management was to keep two openings other than the slope opening in good condition, so employees would have egress without coming to slope opening in case of fire at that point.

Tunnell.

Located at Flushing, on the C. L. & W. R. R. Operated by the Flushing Coal Co., Elyria, Ohio. Drift opening, into the No. 8a seam of coal, about $3\frac{1}{2}$ feet thick. J. A. Trimbath, of Flushing, superintendent and mine boss. Compressed air machines are used to cut the coal; 42 miners and 16 day hands employed. Motor and mule haulage in use. Four visits made. January 15th, mine in poor condition, drainage and ventilation poor. Ordered general improvement. August 10th, mine idle and fan not in operation; no inspection made. The mine had practically been suspended, only driving a place to surface for ventilation and drainage. September 21st, mine in fair condition; entry had been driven out and drainage and ventilation improved, and a full force of men again at work. December 24th, in fair condition, but some of the stoppings were not put in as tight as they should be; the management promised to have them remedied.

Lucy.

Located between Neffs and Stewartsville, Ohio, on the B. & O. R. R. Operated by the Gordon Coal Co., Stewartsville, Ohio. Hugh Ferguson, Stewartsville, Ohio, superintendent and mine boss. Drift mine, employing 51 miners and 14 day men. Four visits made. May 20th, in fair condition. Some of the miners were slow in complying with the copper tamping tool law; also requested some brick stoppings put in between main inlet and outlet; wires had been rehung to comply with the law. August 26th, miners had complied with tamping tool law. Ventilation along working faces was not good; some doors and stoppings were not in good condition; orders were given to have them repaired. September 1st, by request of management and mine committee scales tested and were found correct. November 4th, mine in fair condition. 6th west having been driven out to daylight and supplying fresh air close to working faces. Tile stoppings are being built between main inlet and outlet.

Dellora.

Located at Glencoe, Ohio, on the B. & O. R. R. Operated by the Highland Coal Co., Wheeling, W. Va. Shaft, 67 feet deep, employing 200 miners and 60 day hands. H. S. Reppert, Glencoe, Ohio, superintendent. Stephen Fitzpatrick, same place, mine boss. Eight visits made. February 16th, ventilation on south was not good; requested improvement. Miners were slow in complying with the copper tamping tool law. March 19th, ventilation improved on south side, but deficient on north side. Requested men kept out from some entries until ventilation was made more satisfactory. The kind of shields in use on mining machines were also not approved, as they did not protect the chain in the manner they should. June 3rd, ventilation was improved on north side. July 19th, some of the entries were not well timbered, and wires along first north

were in poor condition, and doors and stoppings not carried forward as they should be. Left orders for improvement, and returned July 28th. Considerable improvement had been made in the matter of both wires and stopping. All the miners were supplied with the right kind of tamping tools and shields were made satisfactory. September 21st, in fair condition; manholes made along first north motor line, but a dispute arose as to how the return power should be conducted from the mining machines, my contention being that they should carry two wires, positive and return, from the motor passway in; the management contending for the use of the rail for return. At a meeting with Mr. J. C. McKinley, general manager of the company, it was agreed to take the matter up with Chief Inspector Geo. Harrison. At the conference held in Columbus, at which Mr. McKinley, some other coal operators, Mr. Geo. Harrison and myself were present, an agreement was reached that the motor lines were to be moved up to where track was bonded, and the positive and return wire carried in from that point. November 3rd, the ventilation was not good on 3rd south face entries. A squeeze had affected the airway, causing the 3rd south faces to be ventilated from the north side split of air until another pair of entries could be connected from 2nd south to 3rd south. Found the agreement in regard to carrying return power from cutting machines being complied with. December 16th, in fair condition, only on 3rd south, where they were expecting to cut through from 2nd, were cut through the night before, and it would be only a matter of a few days until that section would be properly ventilated. Only a few brick or cement stoppings have been built in this mine.

Eleanor.

Located at Warnock, Ohio, on the B. & O. R. R. Operated by the Highland Coal Co., Wheeling, W. Va. Shaft, 140 feet deep, employing 20 miners and 11 day men. Four visits made. On April 19th, while on my way to the mine, was informed that men had been burned that morning with gas. Upon arriving at the mine, found this to be true. The fire boss, J. P. McLean, had made his examination and stated that he discovered gas in first west entry and opened the compressed air valve that was leading up in that entry, thinking it would remove the gas or fire damp. He placed no signal of warning or danger board, but notified one of the men verbally that there was gas in the entry, and permitted them to enter, with the result that Walter Sanders, John Kolovocki, Stanford Rounds, Theodore Goddard and Emmet and Henry Travis were severely burned about the face and hands. Entering the mine, found a few of the board stoppings had been blown out and one door blown down. These were soon repaired and the mine was thoroughly examined. Found there was still some standing gas in the entries where the men had been injured. Orders were left to have the fire boss' duties strictly complied with, and to allow no one to go in mine other than fire boss until places were free from fire damp. April 23rd, found former orders were being complied with, and J. P. McLean had been succeeded as fire boss by Brockley Hurst. July 22nd, investigated fatal accident to Thos. Douglas Sutherin, superintendent and mine boss, who had been killed the day before by an explosion. The mine had been idle and he was keeping up steam and pumping water from the mine. The fan had not been running the night of the 20th of July, and it is not known just how long before. On the morning of the 21st of July he started the fan, and in a short while after, he went in the mine to make some examination or repair the pump, when an explosion occurred, evidently from his lamp, as all the safety lamps were afterwards found in the engine room.

He was found by men from the Dellora mine, who had been sent for after the explosion, lying close to where the pump was located, about 600 feet from bottom of shaft. The explosion caused considerable damage on the inside of the mine, such as blowing out stoppings and doors, as well as several timbers on main south and one and two west. The mine has not run any coal since, only pumping water, and the pump can be started from outside. Whenever the pump requires attention, a couple of men go in with safety lamps. When working, compressed air machines are used to cut the coal.

Hall & Gilhooley.

Will be reported in District No. 10, as it was not visited until the change in districts was made.

Johnson.

Located at Pipe Creek, Ohio, on the C. & P. R. R. Operated by the Johnson Coal Co., Bellaire, Ohio. Geo. Johnson, Dillies Bottom, Ohio, superintendent. Jas. Cook, Shadyside, mine boss. Slope, 250 feet long, employing 104 miners and 25 day men. Two visits made. January 28th, mine ventilation not very good, and mining machines not shielded; stoppings not carried forward as close as they should be, especially on 9 and 10 west; miners had also not complied with law in regard to copper tamping tools; second opening was in a wet condition, and some of the wires were not hung in accordance with the provisions of the law. Orders were left to have these matters brought up to standard in all respects. April 28th, considerable improvement had been made; several brick stoppings had been built, and men were working rehang-ing wires to comply with the law, but escapement shaft was still in wet condition. Also investigated fatal accident to John Human.

Black Oak.

Located between Lafferty and Flushing, on the C. L. & W. R. R. Operated by the St. Clair Coal Co., Cleveland, Ohio. D. J. Orr, Flushing, Ohio, superintendent. Hugh Gaffney, same place, mine boss. Shaft, 87 feet deep, employing 151 miners and 39 day men. Six visits made. January 26th, brick and cement stoppings were being built and ventilation was somewhat improved, but machines were only partly shielded, and scarcely any of the miners had complied with the tamping tool law. A request was made for more refuge holes along motor line. May 10th, ventilation was fair; several brick stoppings were completed by this time. Some machines were not properly shielded and were ordered stopped until they were. Scales tested and found correct. July 20 and 21, mine in fair condition; machines all shielded; miners all supplied with proper tamping tools, and manholes made along south face motor line. September 20th, partial examination was made; found in fair condition. Investigated accident. December 7th, mine in fair condition. D. J. Orr, of Flushing, had been succeeded by John Moon, of the same place, as superintendent, Mr. Orr having been transferred to one of the company's other mines

Kennon.

Located 1½ miles west of Flushing, on the C. L. & W. R. R. Operated by the Kennon Coal & Mining Co., Cleveland, Ohio. Frank Corey, Flushing, Ohio, superintendent. Geo. Millward, same place, mine boss. Drift, employing 61

miners and 27 day men. Two visits made. Mine was suspended most of the year. November 8th, just after the mine started, found machines shielded only on one side; ordered operations stopped until they were shielded on the other side. Second opening traveling way in poor condition; scales tested and found correct. December 20th, machines were shielded, and some work had been done on second opening traveling way. Ordered it put in a safe condition or it would be necessary to insist on not more than ten men being employed inside, and to improve the ventilation on 13 and 14 east. The management willingly agreed to start men at work repairing second opening traveling way, which would improve ventilation all over the mine, as it is the intake airway.

Lansing.

Located west of Bridgeport, at Lansing, on the C. L. & W. R. R. Operated by the Lorain Coal & Dock Co., Columbus, Ohio. Jas. W. Johnson, Bridgeport, Ohio, superintendent. Wm. Slater, Blaine, Ohio, mine boss. Drift openings, employing 305 miners and 75 day men. Seven visits made, two for the purpose of investigating fatal accidents. June 4th, investigated fatal accident to Alex. Hodesko. December 23rd, investigated fatal accident to Frank Prodoskie. Five regular inspections were made. Mine is generally found in good condition, only on December 2nd and 3rd, when the location of the inside fan had been changed into what is called the New Hill, there had been a local squeeze on two pairs of entries, which seriously affected the return airway, requiring a great deal of bratticing along main entries in order to maintain the return airway through another channel. This was done as fast as possible, and on December 10th, mine was found in its usual good condition.

Wheeling Creek.

Located two miles west of Bridgeport, on the C. L. & W. R. R. Operated by the Lorain Coal & Dock Co., Columbus, Ohio. J. E. Waters, Bridgeport, Ohio, superintendent. Gilbert Hanson, same place, mine boss. Employs 329 miners and 128 day men. Two drift openings, coming to the same tittle and connecting on the inside. Five visits made. Generally two days are spent inspecting the two openings, as the territory being worked is large. The mine is kept in good condition, and the management is to be given due credit for the manner in which the mine is taken care of. There has been a shaft opening, 9 feet in diameter and 125 feet deep, sunk at the interior of the mines during the year, which is used as an upcast for ventilating both openings. The management installed an inside Jeffrey fan and dispensed with the large steam fan located on the outside. This action was not pleasing to the mining department, being considered a step in the wrong direction to abandon the use of a steam fan located on the outside and depending on an electric fan placed inside of the mine, but so long as employees inside the mine are supplied with sufficient ventilation, it is powerless. The results will undoubtedly prove that inside ventilating fans cannot be depended upon.

Crescent No. 2½.

Located at Crescent, on the C. L. & W. R. R. Operated by the Lorain Coal & Dock Co., Columbus, Ohio. Drift opening, employing 150 miners and 10 day hands. Jas. R. Birkbeck, superintendent, Bridgeport, Ohio. Wm. Embleton, Blaine, Ohio, mine boss. Five visits made. February 1st, ventilation

was unsatisfactory, especially on the south side of mine, where some black damp was noticeable. Requested immediate improvement, and returned February 8th. Considerable improvement had been made in ventilation. The electric fan that was located where No. 2½ mine connected with No. 4 mine had been placed close to the mouth of No. 4 mine, as both the mines are practically ventilated on the same current of air. From this time to the close of the year, ventilation has been fair. August 31st, there was considerable dust along haulageway on south side, which the management promised to have removed immediately.

Crescent No. 3.

Located at Crescent, on the C. L. & W. R. R. Operated by the Lorain Coal & Dock Co., Columbus, Ohio. Jas. R. Birkbeck, Bridgeport, Ohio, superintendent. Wm. Redfern, Crescent, Ohio, was succeeded as mine boss by Wm. Donley, Pleasant Grove, Ohio. Drift opening, employing 100 miners and 31 day men. Four visits made. March 11th, in fair condition. June 16th, found breakthrough law violated and stoppings not carried forward close enough. Requested all unlawful places stopped. August 30th, ventilation along working faces not satisfactory, and a few places were again found driven ahead of air. Ordered those places stopped, and requested improvement in the ventilation. November 5th, mine was found in good condition; 3 and 4 west entries had been connected with opening from outside, but it was not being used to conduct the air. Later on, it will be the main motor line of this mine. July 16th, tested all the Crescent mine scales (four sets) and found correct.

Crescent No. 3½.

Located same place as Crescent No. 3. Same company and superintendent, with Richard Delbridge, Maynard, Ohio, mine boss. Drift opening, employing 53 miners and 31 day men. Three visits made: May 17th, July 16th and October 5th. The mine was generally found in fair condition. May 17th, stoppings were not kept up as close as they should be, but mine boss stated that he would have them attended to at once.

Crescent No. 4.

Located same place as other Crescent mines, operated by same company. Same superintendent. Richard Delbridge, Maynard, Ohio, mine boss. Drift opening, employing 55 miners and 12 day men. Four visits made: February 8th, June 15th, August 30th and November 15th. Mine was found in fair condition on each visit. At the beginning of the year, some of the return wires were placed along the bottom. These were requested put up; also requested breakthrough stoppings put in old 1 and 2 south entries, so as to prevent the air from escaping outside before it was conducted to No. 2½ mine. This company is one of the largest producers of coal in District No. 8, four mines at Crescent, two at Wheeling Creek, and the Lansing property, and has been exceptionally fortunate in the number of fatal accidents this year, only two persons meeting death in their mines. Both of those occurred at the Lansing mine. Working places are visited very regularly by mine bosses or their assistants at all times at company's mines.

Edgehill.

Located at north end of Bellaire, Ohio. Operated by the A. J. Morgan Coal Company, Bellaire, Ohio. Jacob Long, Shady Side, Ohio, superintendent.

and mine boss. Drift opening, employing 56 miners and 9 day men. Three visits made. One in company with Inspector L. D. Devore. February 19th, ventilation not good, some machines were not shielded, and very few copper tamping tools were in use by miners. Orders were left to comply with the law in all respects. February 27th, improvements were being made and miners had ordered copper tamping tools. August 17th, by request of Chief Inspector Geo. Harrison, the mine was visited in company with Inspector L. D. Devore, in regard to the shields on mining machines, over which some dispute had arisen between Inspector Devore and management. The management willingly agreed to make shields satisfactory. Ventilation was considerably improved; there had been a Scott fan installed at mouth of second opening in place of using furnace.

Kirkwood.

Located west of Bridgeport, on the C. L. & W. R. R. Operated by the Moores Run Coal Co., of Fairmont, W. Va. Earl McConnaughy, superintendent. Wm. Heller, mine boss. Both of Bridgeport, Ohio. Five visits made, one to investigate fatal accident. The mine was generally found in satisfactory condition; any matter suggested was willingly attended to by management. There have been several brick stoppings put in the mine this year, and another small Robinson fan to assist the 11-foot fan, which is located at the mouth of mine. Visited February 3rd, February 5th, May 21st, August 27th and November 1st.

Pittsburg-Belmont No. 1 or Neff No. 1.

Located at Neff, on the B. & O. R. R. Operated by the Pittsburg & Belmont Coal Co., Columbus, Ohio. Franklin Neff, superintendent. John Crawford, Steele, Ohio, mine boss. Drift opening, employing 222 miners and 51 day men. Seven visits made; three to investigate fatal accidents, which will be found elsewhere in the fatal accident reports. March 26th, mine in fair condition; requested manholes made along southeast motor line. June 14th, in fair condition; manholes were being made. August 5th, condition satisfactory, but the miners had not complied with law in regard to copper tamping tools. August 20th, all iron tamping tools had been sent out of mine. October 7th, mine in fair condition. On the night of November 9th, mine was visited by a fire, destroying the tippie, engine room and machinery, entailing a big loss to company, and depriving a large force of men of employment. During the year, the old fan was replaced by an 8-foot Capell fan. Visited the mine management after the fire, and requested them to board up mouth of mine so no one would enter until fan was running, as the mine generates fire damp.

Pittsburg-Belmont No. 2, or Neff No. 2.

Located at Neffs, on the B. & O. R. R. Operated by the Pittsburg-Belmont Coal Co., Columbus, Ohio. Franklin Neff, superintendent, Neff, Ohio. John W. Lovejoy, Steel, Ohio, mine boss. Drift opening, employing 167 miners and 27 day men. The mine was suspended from January until November. Visited November 18th, just after resumption of work, and was found in good condition. The fan formerly in use at No. 1 mine provides ventilation, displacing the furnace.

Pittsburg-Belmont No. 3.

Located on the Belmont Central R. R., about two miles from Lafferty. Operated by the Pittsburg-Belmont Coal Co., Columbus, Ohio. Jas. Prender

east, Lafferty, Ohio, superintendent. John Atkinson, same place, mine boss. Slope opening, 283 feet long, employing on last visit 24 miners and 12 day men. Three visits made. April 21st, place was being driven toward the shaft; advised keeping a bore hole ahead, as there was considerable water in shaft. This was done, and when bore hole went through the opening, pipe with a valve was placed in the hole and water let out as fast as pump would handle it at bottom of slope. August 19th, mine was shipping coal; is equipped with an electric hoist. Loaded cars come up the slope under the empty cars as they are on the way down. It also has an electric dumping apparatus. October 12th, again visited. Found in fair condition. Ventilation is procured by steam exhaust from the steam pump located at bottom of slope. When last visit, preparations were in progress to place stairs in the air shaft. Advised fan be secured at once, as the present means of ventilation will soon be of little use. The mine is fast becoming too extensive for present system.

Lydia.

Located $1\frac{1}{2}$ miles west of Maynard, on the C. L. & W. R. R. Operated by the Purselove Coal Co., St. Clairsville, Ohio. Samuel Purselove, same place, superintendent and mine boss. Drift opening, employing 213 miners and 29 day men. Seven visits made. One to investigate fatal accident. Mine generally found in fair condition. The air is conducted from different inlets and is split for each side of mine. February 23rd, found ventilation on upper side of mine impaired, and upon investigation discovered that the splits of air were not properly divided. This was soon adjusted. The breakthrough law was also not strictly observed. On July 6th, requested No. 8 room on 10 east stopped, on account of dangerous condition. February 10th, mine idle, fan not running, no inspection made. March 22nd, in good condition. August 6th, scales tested; found inaccurate. The management willingly employed an expert to adjust them the same day. All other visits, mine was in satisfactory condition.

Pelkey.

Operated by Israel Pelkey, Bellaire, Ohio. Small peddling mine. Visited April 2nd; 4 men employed. Mine was located close to the Bellaire Reservoir, and a settlement was reached between Mr. Pelkey and the town authorities, whereby Mr. Pelkey abandoned the mine.

Provident No. 1.

Located between St. Clairsville and Maynard, on the W. & L. E. R. Operated by the Provident Coal Co., Cleveland, Ohio. David Thomas, St. Clairsville, Ohio, superintendent. Thos. Willis, same place, was succeeded by C. L. Lutton as mine boss. Shaft opening, 68 feet deep, employing 346 miners and 75 day hands. Six visits made, two to investigate fatal accidents, which have been reported. March 31st, ventilation was fair, but machines were only shielded on one side, and very few miners had copper tamping tools. Request was made to have those matters attended to. July 7th and 8th, inspection was made. Finding the breakthrough law was not being strictly observed, and two machines not properly shielded, ordered machines stopped, also places driven over distance stopped, and breakthroughs marked off at proper distance. September 30th and October 1st, ventilation on a few entries was not good. Requested improvement, and management willingly agreed to bring conditions up

to standard. November 17th, partial inspection made, finding improvement in the matters complained about on previous visit. Requested negative wire from cutting machines used for return current instead of using rails. Management stated they would take the matter up with the company at once.

Empire No. 1.

Located south end of Bellaire, Ohio, on the C. & P. R. R. Operated by the Rail & River Coal Co., Pittsburg, Pa. Wm. Maloney, Bellaire, Ohio, superintendent. Owen Donahue, same place, mine boss. Drift opening, employing 272 miners and 76 day hands. Three visits made. February 12th, ventilation good. Only a portion of the machines were equipped with shields, and considerable dust had accumulated along the roads. Requested these matters given attention. March 9th, former orders partly complied with. Requested wire along passway placed all on one side of road. Machines were all shielded. May 12th, in company with Inspector L. D. Devore, found the mine affected by a local squeeze on 1 and 2 west and 3 and 4 west, necessitating their abandonment. A 30 days' notice was given in which to have the trolley wire placed in compliance with circular sent out by Mining Department.

Empire No. 2.

Located south end of Bellaire, Ohio, on C. & P. R. R. Operated by the Rail & River Coal Co., Pittsburg, Pa. Wm. Maloney, Bellaire, Ohio, superintendent. John Eagan, same place, mine boss. Slope opening, 240 feet long, employing 186 miners and 50 day men. Three visits made, one to investigate fatal accident. January 25th, mine in fair condition, excepting trolley wires. Requested these placed in compliance with the law, and places made for refuge along motor line. April 24th, wire in somewhat improved condition, but a large amount still remained to be placed back from rails, as it should be. Requested dust loaded out cleaner from mine.

Empire No. 6.

Located three miles west of Bellaire, Ohio, on the B. & O. R. R. Operated by the Rail & River Coal Co., Pittsburg, Pa. Wm. Maloney, Bellaire, Ohio, superintendent. D. C. Morris, Klee, mine boss, succeeded by Frank Kinder, of Bellaire, Ohio. Drift opening, employing 110 miners and 24 day men. Two visits made. March 24th, mine idle; only 2 men working. Requested wire in some places rearranged. Mine was suspended almost all of the year, commencing to work November 15th. Visited November 19th, and with exception of wires in some places and the amount of places lost by caving in during idle time, mine was in as good condition as could be expected. A ladder had been placed in the escapement shaft.

Lorena.

Located between Maynard and St. Clairsville, on W. & L. E. R. R. Operated by the Roby-Somers Coal Co., Cleveland, Ohio. J. O. Somers, St. Clairsville, Ohio, superintendent. Burt H. Beatty, same place, mine boss, succeeded by Brune Ostroski, of Maynard, Ohio. Drift opening, employing 105 miners and 21 day men. Six visits made. March 16th, mine in poor condition. Machines were not shielded. Stoppings were not kept up, making ventilation poor.

Second opening traveling way was getting in bad condition from water and falls. March 18th, management promised to bring the condition of the mine up to standard. There was a squeeze on both the east and west sides. June 21st, mine idle. Two machines were found not properly shielded. Management promised to have them put on before allowing to operate. September 7th, mine was considerably improved. October 25th, investigated fatal accident, and on December 17th investigated fatal accident; also inspected mine on December 17th. Found in good condition, excepting there was no lawful second opening available. One was being made as fast as possible. The other one was so affected by squeeze it could not be traveled.

Franklin.

Located at Stewartsville, on the B. & O. R. R. Operated by the Raven Coal Co., Wheeling, W. Va. Sim Reynolds, Stewartsville, Ohio, superintendent, and Jas. Spence, same place, mine boss. Drift opening, employing 48 miners and 19 day hands. Furnace ventilation. Four visits made, and mine found in satisfactory condition on each visit. Visited February 15th, June 1st, September 1st and November 22nd.

Schicks.

Located west of Bellaire, on B. & O. R. R. Operated by M. J. Schick Coal Co., Bellaire, Ohio. Drift opening, employing 65 miners and 19 day men. Four visits made. January 27th, requested wires along motor line moved back from over rails. April 29th, wires placed as requested. August 16th and October 29th, mine was in satisfactory condition. M. J. Schick, superintendent. Edw. Conaway, mine boss. Both of Bellaire, Ohio.

Trolls No. 1.

Located at Maynard, Ohio, on the W. & L. E. Operated by the Trolls Coal Mining Co., St. Clairsville, Ohio. Jesse S. Troll, same place, superintendent. Geo. Findlay, Maynard, Ohio, mine boss, succeeded by Evan Evans, same place, the former having been transferred as boss to mine No. 2. Drift opening, employing 200 miners and 42 day men. Six visits made; one in regard to fatal accident on May 27th. Mine generally found in good condition. A supply of copper tamping tools had been purchased by the miners that did not comply with the law, and some delay was experienced in getting them exchanged, but the change was finally made. Also requested more manholes made along motor line. Some have already been made, but there are yet some places where they are necessary.

Trolls No. 2.

Located 1½ miles west of Maynard, on the W. & L. E. Operated by the Trolls Coal Mining Co., St. Clairsville, Ohio. Jesse S. Troll, same place, superintendent. Geo. Holliday, mine boss, succeeded by Geo. Findlay, Maynard, Ohio, mine boss. Drift opening, employing 178 miners and 34 day hands. Five visits made. March 30th, ventilation improved from former visit; 7th west entry had been driven outside, and the air was being brought nearer to the faces of the working places. Some of the entry haulways were not timbered as well as they should be. June 22nd, ventilation was not good, but man-

agement promised to make improvements, and would have stoppings and doors gone over. August 23rd and October 26th, in fair condition. December 28th, ventilation on 13 and 14 east and 13 and 14 west was not satisfactory, and requested it improved. The mine boss stated that he would have the stoppings gone over again, some of which along the main haulway are in poor condition. Suggested that brick be used in place of boards.

West Wheeling.

Located between Bridgeport and Bellaire, Ohio, on the C. & P. R. R. Operated by the West Wheeling Coal Co., Bellaire, Ohio. Wm. Johnson, Bridgeport, Ohio, superintendent and mine boss. Drift, employing 43 miners and 11 day men. Two visits made. February 11th, mine in fair condition. May 4th, in company with Inspector L. D. Devore, found the breakthrough law violated. All unlawful places were stopped and breakthroughs marked off at regular distance. Machines also stopped on account of no shields. Management willingly agreed to have shields put on and breakthroughs made at regular distance.

Virginia Hill.

Located at Lafferty, on the C. L. & W. R. R. Operated by the Virginia Hill Coal Co., Cleveland, Ohio. T. J. Jordon, superintendent. Andy Arrott, mine boss, succeeded by Frank Jordon, all of Lafferty, Ohio. Slope, 95 feet long, employing 95 miners and 33 day hands. Five visits made: April 21st, July 12th, July 15th, September 27th and December 6th. July 15th, investigated fatal accident to Peter Smeigel, which was reported. September 27th, ventilation not satisfactory on a few pairs of entries. Upon inquiring from management, found the speed of fan could not be increased on account of some of the blades being disarranged. These were ordered adjusted, and management had them repaired. Mine in fair condition on all other visits. There is some very tender roof in the mine, but is well looked after and taken care of. All coal is gathered by electric motors.

Maple Hill.

Located at Barton, on the C. L. & W. R. R. Operated by the Y. & O. Coal Co., Cleveland, Ohio. John Whelan, Jr., Barton, Ohio, superintendent. Matthew Anderson, same place, mine boss. Drift opening, employing 165 miners and 42 day men. Six visits made. January 21st, volume of air entering the mine was not sufficient for the number of men employed on the inside. Requested the force kept down to the amount of ventilation. May 26th, ventilation was not good. Ordered places being driven towards where a new slope opening was being made, driven as speedily as possible, which was done. The management was putting forth every effort to improve ventilation with the fan in use, but it was not large enough for a mine of that size, especially on account of the number of old workings with which it is surrounded. June 17th, in about same condition. August 25th, ventilation considerably improved. The new slope opening was completed, conducting the air nearer to working faces. Suggested large fan placed at slope opening. October 27th, requested some dust loaded off motor line, which was agreed to. December 13th, investigated fatal accident. Inspected mine, and found in as good a condition as could be expected with present fan. Foundation was being made for larger and better fan at mouth of slope opening, which should improve the ventilation.

Entries are being timbered with steel "I" beams where needed, in place of wooden timber, and tile is used in place of boards for stopping by this company in all their mines.

Boggs.

Located on the C. L. & W. Branch R. R., a short distance from Barton, Ohio. Operated by the Y. & O. Coal Company, Cleveland, Ohio. John Whelan, Jr., Barton, Ohio, superintendent. P. J. Leonard, same place, mine boss. Drift opening, employing 169 miners and 20 day men. Only one visit was made, February 25th. The old hill was abandoned during the year, and a new opening, started in the direction of a different territory, but nothing has been done toward developing it since early in the year.

Barton.

Located at Barton, on the C. L. & W. R. R. Operated by the Y. & O. Coal Co., Cleveland, Ohio. W. A. Williams, Barton, Ohio, superintendent. W. C. Batson, same place, mine boss. Drift, employing 277 miners and 62 day men. Ventilated by three fans, one steam fan, located at the mouth of one of the openings, and two electric fans inside. Nine visits during the year, three for investigating fatal accidents; one being killed by fall of stone, one electrocuted by coming in contact with trolley wire (500 volts) while standing on rail, and a trip rider, who was run over by cars while standing on front end; as the motor was backing cars up he fell off and was killed. The ventilation has generally been found fair, excepting on October 11th, when the fan was located on 3rd face had been moved and was churning the air around and not delivering it to the outside. This was soon adjusted, eliminating the churning process. A pair of entries are being driven outside in that section, which will bring air in close to working faces, and should improve the general condition of the mine as far as the ventilation is concerned. Several of the entries have been timbered with steel "I" beams in the past year, eliminating the chances for accidents from falls of roof along haulways. All the coal is gathered by electric motors. June 27th, mine was visited by a fire, destroying the engine room and machinery, entailing a big loss to company, and throwing a large number of men out of employment, affecting both Maple Hill and the Barton mines, from which plant both mines received their power. Temporary buildings were constructed as rapidly as possible, and operations were resumed in a short while.

List of Small Mines Employing Less than Ten Men in Belmont County, or District No. 8.

Long.

Operated by Thos. Long, Bellaire, Ohio. Small shaft, employing 6 men. One Morgan-Gardner mining machine in use. Visited January 25th. Mine in fair condition.

Beveridge & Green.

Operated by Beveridge & Green, Powhattan, Ohio. Slope, employing 5 men. Ventilated by steam exhaust in air shaft.

M. T. Garrett.

Operated by Mr. M. T. Garrett, Bellaire, Ohio. Small slope, employing 6 men. One mining machine cuts the coal. A small fan has been installed. This mine is in District No. 10 since May 1st.

Neff & Robinson.

Operated by G. M. Hamilton, Bellaire, Ohio. Drift, employing 3 men.

Nelan.

Operated by J. C. Nelan, Bellaire, Ohio. Drift, employing 9 men.

Humphrey.

Operated by D. R. Humphrey, Flushing, Ohio. Drift, employing 3 men.

D. W. Selway.

D. W. Selway, Fairpoint, Ohio. Drift, employing 3 men.

John Butler.

John Butler, Fairpoint, Ohio. Drift, employing 2 men.

Henry W. Taylor.

Henry W. Taylor, Fairpoint, Ohio. Drift, employing 2 men.

John Gossitt.

John Gossitt, Bannock, Ohio. Drift, employing 2 men.

Conroy.

Operated by David Thomas, Flushing, Ohio. Drift, employing 3 men.

Walker.

Operated by Albert Smith, Flushing, Ohio. Drift, employing 3 men.

White.

Clarence White, Flushing, Ohio. Drift, employing 2 men.

Turnbull.

Jas. Turnbull, Bellaire, Ohio. Drift, employing 2 men.

Klee.

John Klee, Klee, Ohio. Drift, employing 2 men.

Weeks.

Jas. Weeks, Klee, Ohio. Drift, employing 3 men.

Vochill.

Operated by Matthew Johnson, Klee, Ohio. Drift, employing 3 men.

Crolzer.

John Crolzer, Klee, Ohio. Drift, employing 2 men.

Roush.

Andw. Roush, Klee, Ohio. Drift, employing 2 men.

Applegarth.

Wm. Applegarth, Maynard, Ohio. Drift, employing 2 men.

Virka.

Operated by John Helt, Blaine, Ohio. Drift, employing 6 men.

Franklin Neff.

Operated by Chas. Adams, Neff, Ohio. Drift, employing 2 men.

Neff.

Operated by Clyde Dixon, Neff, Ohio. Drift, employing 2 men.

Hardesty.

Operated by Levi Beans, Barton, Ohio. Drift, employing 4 men.

Hardesty.

Operated by Frank Fleming, Barton, Ohio. Drift, employing 4 men.

Anthony Riley.

Anthony Riley, Bridgeport, Ohio. Drift, employing 5 men.

Alex Neff.

Operated by Wilson Dalley, Neff, Ohio. Drift, employing 2 men.

John Ross.

John Ross, Flushing, Ohio. Drift, employing 2 men.

Hamilton Glass.

Operated by Jas. Arnold, Flushing, Ohio. Drift, employing 3 men.

Frank Bethel.

Operated by Benjamin Lalsure, Flushing, Ohio. Drift, employing 3 men.

NINTH DISTRICT

THOS. MORRISON.

COMPOSED OF THE COUNTIES OF CARROLL, HARRISON AND PORTION
OF JEFFERSON.

Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio :

Dear Sir:—In compliance with the custom of the Mining Department, I herewith submit for your approval, the Official Annual Report of the Ninth Mining District for the year commencing January 1st, 1909, and ending December 31st, 1909.

This district is composed of Carroll, Harrison, and a portion of Jefferson County.

The Nos. 5, 6, 7 and 8 seams of coal are worked, also the Nos. 1, 3, 5 and 6 seams of clay.

In another part of the report will be found the number of visits, scales tested, and improvements made. I regret that it is necessary to report 17 fatalities, which occurred during the year; 13 in Jefferson, 2 in Carroll, and 2 in Harrison County.

In the fore part of the year, the coal industry was in a demoralized condition; a great many mines were shut down entirely and others were not running more than half time; and as the coal at the mines was sold at a very low figure, mines were being unprofitably operated, with the result that great difficulty was encountered in having them kept up to that standard required by law, which in the opinion of all good mine managers is the basis of economical production, as well as the safety and welfare of those employed in and around the mines.

Toward the end of the year, the mines that had been suspended resumed operations, and all commenced to operate more steadily, but still low prices for coal at the mines prevailed, and owing to the lack of profits, companies were slow in complying with orders given to make necessary improvements. This condition of affairs did not apply to all mines in the district, as some of the best mine managers realize that in order to produce an economic ton of coal it is necessary to keep their mines up to the highest standard of efficiency.

A great deal has been written and commented on in regard to the number of lives lost in the mines of this country compared with European countries. It is also claimed that European mines are more dangerous than our American mines. While we will concede that the shaft mines may be deeper and probably generate more gas, yet it is questionable whether they are more, or even as dangerous as our mines operated under the present system of mining.

Over 95 per cent. of the coal produced in this district is machine-mined; posts are kept back 12 or 14 feet from the face, in order to allow the machines room in which to operate. This allows the roof to become loose, and is the cause of many of our accidents.

Again, consider the No. 8 vein; here a very treacherous soapstone overlies the coal; the machines generally make a cut 6 feet deep; the loader then shoots this coal down, and in a great many instances before he has enough coal loaded out to enable him to set a prop under the stone, it falls without any warning whatever; again, we find places where the stone is very strong, and in some cases it is necessary to shoot it down; the miner trusting this, loads out the entire cut without setting a prop, believing it to be perfectly solid, when suddenly and without warning the entire cut, or part of it, falls; then, woe betide anyone who may be under it.

As for mines generating gas, our coal measures lie horizontally, and are worked on the room and pillar method, about 50 per cent. of the coal being taken out at the first working, and as the workings advance, the old workings between the face and the shaft fall in, thus making cavities in which to generate explosive gas. As these old workings become more extensive, the ap-

proaches fall in, making it impossible to ventilate them and keep them free from standing gas. As a remedy for this condition, drill holes have been suggested. This is a very good idea, as far as it goes, but, as pillars of coal are left between rooms and entries, it would require a drill hole in almost every room to allow the gas to escape to the surface. In European countries, as I understand it, the coal is all, or nearly all, taken out at the first working, so that the roof is allowed to settle gradually on the gobs, and closes tight behind them, leaving no place for gas to accumulate in, the same as we have in our mines with our present system of mining.

Our most gaseous mines are deep shafts, and in order to prevent squeezes it is necessary to leave large pillars of coal, the majority of which can never be recovered. These mines could and ought to be worked on the longwall system. This would permit all the coal to be taken out, the ventilation simplified, the danger from standing gas and accumulations of dust in old worked out sections removed.

The question of taking care of the old workings and keeping them free from standing gas is a serious one, and should be given due consideration. Our lower veins, which are being opened up as the hill veins become exhausted, are known to generate great quantities of gas, and if they are to be worked on the same system in the future as in the past, I fear that not only will the great sacrifice of life continue, but millions of tons of our natural resources will be forever lost. By adopting the longwall system of mining, we would not only mine all the coal, but we would eliminate the danger from blown-out shots, and the use of explosives, as practically none would be used to break down the coal. Where mines are worked on this system, we seldom, if ever, hear of an explosion, and the loss of life is small, compared to that of mines worked on the room and pillar method.

In recent years some very good laws have been enacted for the protection of those employed in the mines, but I regret to say that in some instances those whom the law was made to protect have not shown the proper spirit in complying with it. For instance, when a shield gets broken off they do not stop the machine until it is replaced, but continue to operate until they hear that the inspector is in the mine. Then again in loading the fine coal (or bug dust), they will load the car as high as it will go out of the room or entry, then put the dust on top, with the result that it is scraped off and deposited along the haulways, and no matter how well it may be cleaned up when the mine starts in the morning, before the day is over you will find that some dangerous deposits of coal dust have been strewn along the haulways. The fine coal or dust could and should be loaded in the bed of the car.

Again, we find some mine managers who have very little regard for the law, or the safety of those employed in the mine. Fortunately, these are greatly in the minority and seldom make a success.

Great opposition has been encountered in some cases when orders have been given to have the electric wires placed in compliance with law, and in some instances it has been necessary to threaten prosecution if operations were not suspended until the law was complied with.

By request, District Inspectors Alex. Smith, W. H. Miller and the writer met Mr. Sullivan and Mr. Savage, officials of the U. M. W. of A., at Salem, on September 9th, for the purpose of making an investigation of the conditions and system of shooting coal in the mines of the Washingtonville district. After a thorough investigation, a report was submitted, in which we condemned the system as unsafe, and requested that miners and operators meet and adopt a safer method. At the same time, we made the statement that we considered

it unsafe for anyone to be in the mine while such shooting was being done, and recommended that the coal be undercut before being shot. No attention was given to these recommendations, with the result that on the 16th day of December an explosion occurred in one of these mines, and two shot-firers lost their lives as the result of this dangerous and reckless system of mining.

In conclusion, wish to say that I have had some controversy with those with whom it is my duty to come in contact, but after a little discussion this has always been amicably adjusted, and altogether relations have been very pleasant, and I wish to take this opportunity of thanking yourself, the other members of the Department, and the office force for the many courtesies shown, and advice rendered in the discharge of my official duty.

Respectfully submitted,

THOS. MORRISON, Sherodsville, Ohio,

December 31st, 1909.

Inspector 9th District

CARROLL COUNTY.

Dorothy.

Located three miles north of Sherodsville, on the W. & L. E. R. R. Operated by the Lincoln Coal Co., Sherodsville, Ohio. J. F. Myers, superintendent. R. M. Campbell, mine foreman. Both of Sherodsville, Ohio. Drift opening, No. 7 vein, $4\frac{1}{2}$ feet thick; mule haulage, furnace ventilation; pick mining. Visited five times during the year, and on each occasion found in good condition for pillar work. The last of this work was completed on the 23rd of November and the mine abandoned. This mine generally furnished employment for 25 miners and 5 day men. A new mine is being opened at Delroy by the same company.

Kirk.

Located two miles west of Salineville, on the C. & P. R. R. Operated by the Deveny-Kirk Coal Co., Salineville, Ohio. J. R. Deveny, superintendent. H. J. Brown, mine foreman. Both of Salineville, Ohio. Drift opening, strip vein, 3 feet thick; worked on the single entry system; fan ventilation; mule and motor haulage; machine mining. Employs 41 miners and 16 day men. Visited March 30th. Orders given to cease operating machines until provided with shields. July 16th, orders of previous visit complied with. October 27th, mine in excellent condition. Recommended change in the method of working, in order to dispense with half of the doors and improve ventilation.

Horse Shoe.

Located at Lindentree, on the B. & O. R. R. Operated by the Ohio Mining & Ry. Co., Massillon, Ohio. J. L. Rinehart, Lindentree, superintendent. Hugh Paterson, Magnolia, Ohio, mine foreman. Drift, No. 6 vein, 3 feet 8 inches thick; fan ventilation; mule and rope haulage; machine mining. Double entry system; 20 miners and 6 day men employed. Visited March 19th and April 28th; conditions good. Later, operations were suspended, remaining so at the close of the year.

Magnolia Shaft.

Located at Magnolia, on the B. & O. R. R. Operated by the Magnolia Coal Co., Akron, Ohio. J. J. Dagenhard, Magnolia, Ohio, superintendent. J. Dagenhard, Jr., was mine foreman until September 30th, when he resigned to take a similar position with the Greer-Beatty Clay Co., and was succeeded by Hugh Paterson, Magnolia, Ohio. Shaft, 65 feet deep, No. 5 vein, from 3 to 5 feet thick; machine and pick mining. Fan ventilation, motor and mule haulage; double entry system. Visited four times during the year. This mine is under the management of a good, practical man, who puts forth every reasonable effort for the protection of those employed in and around the mine, and does his uttermost to comply with the law.

National No. 6.

Located at Magnolia, on the C. & P. R. R. Operated by the National Fireproofing Co., Canton, Ohio. Wm. Weaver, superintendent. John Williams, mine foreman. Both of Magnolia, Ohio. Drift, No. 6 vein, $3\frac{1}{2}$ feet thick; furnace ventilation, mule haulage, pick mining; 7 miners and 3 day men employed. Visited twice and found in very good condition.

Greer-Beatty.

Located at Magnolia, Ohio, on the C. & P. R. R. Operated by the Greer-Beatty Clay Co., Magnolia, Ohio. C. S. Greer, superintendent. J. Dagenhard, Jr., mine foreman. Both of Magnolia, Ohio. Drift, No. 5 vein, 3 feet 8 inches thick; worked on the double entry system; furnace ventilation; mule haulage; pick mining; 6 miners and 3 day men employed. Three visits made, and found in good condition. October 6th, located a place to sink a shaft for an escapement way, which no doubt has been completed.

Leesville.

Located at Leesville. Operated by the Leesville Coal Co., Leesville, Ohio. E. J. Thomas, same place, superintendent. Slope, to No. 7 vein. Visited March 11th, slope being driven, and up to the present the writer has no knowledge of the slope having reached the coal.

- Russell Hill.

Located at Delroy, on the W. & L. E. R. R. J. R. Tope, receiver. Shaft, 45 feet deep, No. 6 vein, 3½ feet thick. Furnace ventilation. Operations suspended September, 1908. Placed in hands of receiver April 9th, 1909. Visited August 23rd; still suspended.

Somers No. 2.

Located at Sherodsville, on the W. & L. E. R. R. Operated by the Somers Mining Co., Cleveland, Ohio. Mark Coe, superintendent. Harry Harris, mine foreman. Both of Sherodsville, Ohio. Shaft, 71 feet deep; No. 6 vein, 4 feet thick. Fan ventilation, motor and mule haulage. Machine mining; 140 miners and 52 day men employed. Six visits made. In opening this mine a mistake was made in turning rooms off the main butt entries, which in the last few years have been giving the management considerable trouble, owing to water coming out of the old workings onto the haulway, with the result that it is always in a muddy condition. This should also have been made the main inlet for the air, split at the head, and returned on both sides of the mine to the fan, only one overcast being necessary to accomplish this, but as rooms were turned off both main entries this cannot be done. The south side is very poorly ventilated; the north good. In order to secure an abundance of ventilation on the south, it will be necessary to sink a shaft. A request has been made that this be done, and as a shallow place can be reached in the near future, the management has agreed to comply with the request.

Strip Vein.

Located two miles west of Salineville, on the C. & P. R. R. Operated by the Strip Vein Mining Co., Salineville, Ohio. Matthew Smith, same place, has full charge. Drift, strip vein, 3 feet thick; worked on single entry system; machine mining, motor haulage; fan ventilation; employs 68 miners and 26 day men. Three visits made and mine always found in good condition.

Sterling No. 1.

Located two miles west of Salineville, on the C. & P. R. R. Operated by the Sterling Mining Co., Cleveland, Ohio. Samuel Madison, Salineville, Ohio,

has full charge. Drift, strip vein, 3 feet 3 inches thick; single entry system; fan ventilation; motor and rope haulage; machine mining. Employs 75 miners and 24 day men. Visited March 31st. Found in good condition. Requested that third rail be dispensed with as a motive power, owing to the danger from electrical shock. July 15th, third rail removed and rope haulage installed. Conditions excellent. It is pleasing to report that this company always endeavors to comply with the law, and spares no expense in the protection of those employed in the mine.

CARROLL COUNTY CLAY MINES.

Midway.

Located two miles west of Malvern, on the C. & P. R. R. Operated by the Pittsburg & Malvern Clay Co., Pittsburg, Pa. N. A. Lewton, Malvern, Ohio, was superintendent, but resigned during the year to accept a more remunerative position, and was succeeded by A. F. Blatchford, Malvern, Ohio. G. W. Davis, same place, mine foreman. Drift, No. 6 seam of clay and coal; clay 8 feet and coal 3 feet thick. Mule haulage; furnace ventilation; employs 8 miners and 3 day men. Visited April 9th; orders given to clean out second opening. October 5th, second opening cleaned out as directed, and mine in good condition.

Sandy Valley.

Located at Malvern, on the C. & P. R. R. Operated by the Deckman-Duty Clay Co., Cleveland, Ohio. J. F. Fisher, superintendent. Mitchell Buck, mine foreman. Both of Malvern, Ohio. Drift, No. 6 clay and coal; clay 8 feet and coal 3 feet thick. Mule haulage; furnace ventilation; 14 miners and 7 day men employed. Visited March 16th and October 5th. On both occasions found in excellent condition.

Robinson No. 5.

Located at Malvern, on the C. & P. R. R. Operated by the Robinson Clay Product Co., Akron, Ohio. Geo. Poland, superintendent. J. W. Johnson, mine foreman. Both of Malvern, Ohio. Slope, No. 5 clay and coal; clay, 6 feet, coal 2 feet thick. Mule and rope haulage; fan ventilation. Employs 9 miners and 5 day men. Visited March 16th and October 5th; conditions as good as circumstances would permit.

Big Four.

Located one mile east of Malvern, on the C. & P. R. R. Operated by the Big Four Clay Co., Canton Ohio. Geo. Neidliger, superintendent. L. E. Cressinger, mine foreman. Both of Malvern, Ohio. Drift, No. 6 clay and coal, 6 feet and $2\frac{1}{2}$ feet thick. Employs 10 miners and 3 day men. Mule haulage, furnace ventilation. Visited March 15th; conditions approved. October 4th, ventilation not properly distributed; ordered the necessary doors and stoppings built to conduct air through the workings.

Metropolitan No. 6.

Located at Pekin, on the C. & P. R. R. Operated by the Metropolitan Paving Brick Co., Canton, Ohio. A. L. Currey, superintendent. L. L. Buck, mine foreman. Both of Minerva, Ohio. Drift, No. 6, clay and coal, 6 feet and $2\frac{1}{2}$

feet thick; mule haulage, fan ventilation; 11 miners and 5 day men employed. Visited March 15th, May 27th and October 5th, and on each occasion found in very good condition.

SMALL COAL MINES.

Scotts.

Domestic country mine, located at Algonquin. Drift, No. 7 vein; 2 miners employed. Operated by Edw. Yealey, Algonquin. Visited September 8th.

McCort.

Operated by Alex. McCort, Algonquin, Ohio. Drift, No. 7 vein; 3 miners employed. Natural ventilation, mule haulage. Visited September 8th.

Ball.

Operated by C. C. Hidey, Leesville, Ohio. Drift, No. 7 vein, 4 feet thick; 3 miners employed.

Henry.

Operated by G. C. McCreary, Leesville, Ohio. Drift, No. 7 vein, 4½ feet thick, of excellent quality. Mule haulage; furnace ventilation; 3 miners employed; conditions good.

Enolds.

Operated by Ernest Enold, Sherodsville, Ohio. Drift, No. 7 vein, 4 feet thick; 3 miners employed. Mule haulage, natural ventilation.

Germans.

Operated by Jenkins & Matthews, Sherodsville, Ohio. Drift, No. 7 vein, 4 feet thick. Mule haulage, natural ventilation; 3 miners employed.

DESCRIPTION OF STEEL I-BEAMS, AND THE USE AND ADAPTABILITY OF STEEL TIMBERING IN MINES.

About 1875 rolled girders of I-beam shape were used at the bottom of the shaft in the Cambois colliery, in Northumberland, in the construction of an underground machine shop. In 1878 came the first use of steel for the support of roofs in mining operations in the mines of Commentry, France, where old rails were used as headpieces. The best results were obtained when they were placed edgewise, but they were very liable to breakage. Iron bars of rectangular section 3.15 inches x 1.18 inches x 12 feet long were ultimately adopted in preference to rails and other sections, and in 1889 some of the bars had been reused 200 times. Breakages were rare, as iron or steel bends under stress before breaking. Previous to 1884 old iron and steel rails were used in England and in 1885 special sections were manufactured especially for roof beams and for steel props. In 1897 came the first use of standard structural steel sections for the framing of square timbers at the Stearn's shaft of the Susquehanna Coal Company, Nanticoke, Pa., and at Hazleton shaft colliery, No. 40 slope, Lehigh Valley Coal Company. Since 1897 the success which has attended the installation of steel gangway supports has led to a gradual increase in the number of installations, and in the last two or three years more rapid progress has been made by reason of the introduction of forms especially adapted for use as the legs of square timber sets, props, etc. Experience indicates that the standard I-beam is the form of section best adapted for the collars of the square timber sets and for roof supports generally, as this form of section combines a high degree of resistance to bending with a minimum of material. For use as the legs of the square timber sets or as isolated props the lighter sizes of H-sections are to be recommended, as they possess a large radius of gyration and a most economical distribution of material to resist compression in comparison to their weights.

The use of steel for the complete square timber sets has been confined up to date largely to the anthracite mines, where the loads are extremely heavy and timber hard to obtain. Noteworthy examples of the use of steel for roof supports in the form of I-beams supported directly on the coal, or on the rock, or on short wooden posts, are to be found in the bituminous fields of southeastern Ohio. At the Boggs mine of the Youghiogheny & Ohio Coal Company, Barton, Ohio, for example, 5,000 feet of permanent gangway is maintained in this way by the use of 6-inch 2.25-pound I-beams about 6 feet long; and at No. 3 mine, also at Barton, there is a similar installation on an entry 16 feet wide. In most cases, 6-inch beams being used and taking the place of 10-inch x 12 inch timbers, the average life of which is only one and a half to two years. At drift No. 1, Roby Coal Company, Adena, Ohio, steel is being used to form a permanent roadway 9,000 feet long. In cases where the coal is good and solid and not liable to crush, this simplest form of construction finds ready use. In these mines, however, places of unusual weakness are taken care of by short timber props of longer or shorter lengths, as conditions may require, to obtain solid bearings. It may be said that in some states the mine inspectors object to the supporting of beams directly on the solid coal, and great care should be exercised not to permit any excessive loads to come thereon.

HARRISON COUNTY.

Roby No. 1—Nos. 1 and 2 Drifts.

Located near Adena, on the W. & L. E. R. R. Operated by the Roby Coal Co., Cleveland, Ohio. W. L. Moke, Adena, Ohio, superintendent. Al Jepson had charge of the No. 1 drift, and Samuel Cook had charge of the No. 2 drift up to September 23rd. At that time Mr. Cook was transferred to the No. 2 mine at Ramsey. Mr. Jepson was then given charge of the No. 2 drift and Thos. Aspinwall took charge of the No. 1 drift. The coal from both openings is dumped over the same tippie. No. 8 vein, 5 feet thick; fan ventilation; motor and mule haulage; machine mining. About 350 miners and 75 day men employed in connection with the two mines. These mines have a very tender roof, and at one time the haulways were considered the most dangerous in the district. Conditions were so uncertain that those in charge could never tell when they started in the morning the length of time the mine would be in operation, as a fall was liable to occur at any time, suspending operations for the day. Under the able management of the present manager and his assistants (who deserve a great deal of credit) conditions have changed, and these mines will now compare favorably with any in the district.

In order to show the energy, perseverance and expense required to bring about these results, it will be necessary to give a brief description of the amount and kind of timber used on the main haulways. Taking first the No. 1 drift, the main entry is timbered with 833 steel I-beams, and 298 8-inch x 10-inch oak timbers; south face, 1,140 steel I-beams and 594 8-inch x 10-inch oak timbers; north face, 160 steel I-beams, 40, 8-inch x 10-inch oak timbers, making a total in this mine of 2,133 steel I-beams and 1,032 8-inch x 10-inch oak timbers.

No. 2 drift, north and main entry, 818 steel I-beams, 733 8-inch x 10-inch oak; 1st south, 607 steel I-beams, 198 8-inch x 10-inch oak; 2nd south, 65 steel I-beams, 12 8-inch x 10-inch oak; total, 1,490 steel, 943 oak timbers.

Even with all this timbering which has been done in the last two and a half years, the management informs me that the cost of production is a great deal less than when they attempted to operate without properly timbering the haulways, and taking the risk of no one being there when a fall occurred. This demonstrates that in keeping a mine up to a high standard of safety the efficiency is increased and the cost of production decreased. During the year, both of these mines have been provided with new escapement and traveling ways at the head of the workings; these are also used as inlets for air. During the year, 5 visits were made to the No. 1 drift and 4 to the No. 2 drift. Two fatalities and one case of suicide occurred in the mines.

Adena.

Located one mile west of Adena, on the W. & L. E. R. R. Operated by the West Mining Co., Adena, O. R. C. West, superintendent; John West, mine boss, both of Adena, O. Drift, No. 8 vein, 5 feet thick; machine mining. Operations were suspended January, 1908, remaining so until November 1st of the present year, when the present company took charge. As it was too expensive to clean up the old mine, a new opening was started, and when visited November 29th was driven about 100 feet, and the airshaft almost completed.



**STEEL MINE TIMBERS, DRIFT NO. 1.
ROBY COAL COMPANY, ADENA, OHIO.**



Majestic.

Located at Blairmont, on the W. & L. E. R. R. Operated by the A. G. Blair Mining Co., Toledo, O. Wm. Bunney, Blairmont, superintendent; P. W. Kane, same place, mine boss. Drift, No. 8 vein, 5 feet thick; fan ventilation, motor and mule haulage; machine mining. Employs 115 miners and 37 day men. This mine was visited 5 times during the year, and conditions of drainage, ventilation and general safety found very unsatisfactory on each occasion. By request, Mr. Blair met the writer at the mine December 17th, when the condition of the mine was discussed, and he agreed at that time to have the necessary timbering done, a fan capable of producing the desired results installed, and the general conditions improved. An airshaft was sunk and furnace erected on the west side of the mine during the year, improving the ventilation.

Glinther.

Located at Kenwood, on the W. & L. E. R. R. Operated by the Oliver Coal Co., Pittsburg, Pa. J. F. Thomas, Hurford, O., superintendent. Drift, No. 8 vein, 5 feet thick; machine mining, motor and mule haulage; fan ventilation; 44 miners and 12 day men employed. Visited March 23rd, mine being redeveloped after a suspension of 18 months, workings having all fallen in during that time. May 24th, operation again suspended. October 22nd, mine being cleaned up preparatory to resuming operations.

Newton.

Located at Fishers, on the Penn. R. R. Operated by the Newton Coal & Mining Co., Dennison, O. Frank Culley, same place, superintendent and mine boss. Slope, opening to No. 7 vein, which is $4\frac{1}{2}$ feet thick; fan ventilation; rope and mule haulage; 48 miners and 17 day men employed. Four visits made, and conditions on each occasion satisfactory.

Hopedale.

Located at Hopedale, on the Wabash R. R. Operated by the Lambersca Coal Co., Coshocton, O. J. H. Fitch, Hopedale, O., in charge. Drift, No. 8 vein, $4\frac{1}{2}$ feet thick. Only two miners employed at the time it was visited, November 5th. As the work of erecting the tibble and laying the switch has not commenced, it will be some time before shipment of coal commences.

SMALL COAL MINES.**Hagen.**

Operated by Robert Hagen, Adena, O. Drift, No. 8 vein, 5 feet thick; natural ventilation; 1 miner employed.

Shields.

Operated by Harry Shields, Adena, O. Drift, No. 8 vein, 5 feet thick; 2 miners employed.

Grove.

Operated by G. W. Grove, R. D. No. 1, Cadiz, O. Drift, No. 8 vein, 5 feet thick; 2 miners employed.

More.

Operated by J. D. More, Short Creek, O. Drift, No. 8 vein, 5 feet thick; 2 miners employed.

Jenkins.

Operated by A. B. Jenkins, Short Creek, O. Drift, No. 8 vein, 5 feet thick; 2 miners employed.

Bins.

Operated by Addison Bins, R. D. No. 1, Cadiz, O. Drift, No. 8 vein, 5 feet thick; 2 miners employed.

Plum Run.

Operated by W. Brown, R. D. No. 1, Uhrichsville, O. Drift, No. 7 vein, 4½ feet thick; 5 miners employed.

McGill.

Operated by O. C. McGill, Tappan, O. Drift, No. 7 vein, 4 feet thick; 3 miners employed.

JEFFERSON COUNTY.**Portland.**

Located at Connors, on the W. & L. E. R. R. Operated by the Rayland Coal Co., Pittsburg, Pa. C. A. Miller, Rayland, O., is both superintendent and mine boss. Drift, No. 8 vein, 5 feet thick; mule and motor haulage. Fan ventilation, machine mining; employs 70 miners and 20 day men. Operations were suspended from the first of the year until June 16th. Visited July 19th; orders given to place electric wires in compliance with law and provide new escapement way. November 22nd, escapement way completed and mine in fair condition.

W. & L. E. COAL MINING CO.'S MINES.**Connor Nos. 1 and 2.****Dillon Nos. 2 and 4.**

Located respectively at Connorville, Dillonvale and Herrick, O., on the W. & L. E. R. R. Operated by the W. & L. E. Coal M. Co., Cleveland, O. Fred Hornickel, Dillonvale, O., is general superintendent. Drift openings, No. 8 vein, 5 feet thick; fan ventilation; motor and mule haulage; machine mining.

Connor No. 1.

Fred Aspinwall, superintendent; S. W. Ruckman, mine boss, both of Connorville, O. One hundred miners and 30 day men employed. Visited March

5th; requested door erected on drift, in order to improve the ventilation. July 20th, orders of previous visit complied with. Three automatic doors installed; ventilation excellent. Requested No. 7, 11 and 13 west entries timbered. November 21st, previous orders complied with and new opening made at head of 6 south face. Condition excellent.

Connor No. 2.

Fred Aspinwall, superintendent; J. B. Ruckman, mine boss, both of Connorville, O.; 183 miners and 40 day men employed. January 30th, investigated fatal accident. March 4th, again investigated fatal accident. Made an inspection of the mine, found ventilation unsatisfactory. As fan was inadequate, requested a larger one installed. May 11th, visited in company with Mr. Gallagher and Mr. Hornickel. Arrangements were made to clean out the east opening and install electric driven fan at that point. July 21st, an 8-foot Stine fan installed; also 4 automatic doors. Ventilation very satisfactory. November 23rd, new opening made at head of 6th south face entry air split, which was used for an outlet for one of the splits. A wonderful improvement has been made in the general condition of this mine, also the No. 1, during the year, and I heartily appreciate the manner in which those connected with the management have complied with every request.

Dillon No. 2.

Geo. Chamberlin, mine boss, Dillonvale, O.; 308 miners and 52 day men employed. Suspended from the previous year; resumed operations June 1st. Visited 4 times. This mine has an excellent roof, is provided with 3 fans, well ventilated, under good management, and, with the exception of ordering dust removed from the haulways, which order was complied with, no requests for improvements were necessary.

Dillon No. 4.

Jos. Bainbridge, mine boss, Herrick, O.; 156 miners and 36 day men employed. Resumed operations April 13th, after several months suspension. Visited May 7th. During the time the mine was suspended it was retimbered and placed in good condition. Requested opening made on the east side. September 14th, investigated fatal accident, inspected mine. Found ventilation deficient; electric wires not properly guarded, as required by law. Gave orders to remedy this at once. October 20th, orders of previous visit complied with, and conditions approved. Opening on east side progressing as rapidly as possible, and will probably be completed by the end of the year.

Edgar No. 1.

Located two miles east of Dillonvale, on the W. & L. E. R. R. Operated by the Glens Run Coal Co., Cleveland, O. C. W. Maurer, Dillonvale, O., superintendent; H. W. Jack, same place, mine boss. Drift, No. 8 vein, 5 feet thick; machine mining, mule and motor haulage. Fan ventilation; employs 100 miners and 40 day men. Six visits made. Orders were given in the early part of the year to provide an opening between the two mines at the head of the workings for an airway and escapement. This was finally completed after a great deal of delay. The management of the mine has been neglected to

such an extent that the conditions of drainage, safety and ventilation have become very bad. Some time during the month of August it was necessary for them to suspend operations, to clean out and timber the main haulway. September 22nd, found main haulway cleaned up and fairly well timbered. Requested that 11 east haulway be timbered and manholes cleaned out. December 16th, ventilation was very poor; 11 east in a dangerous condition; notified motorman of the danger, and advised him not to haul any more over that part of the road until it was made safe, and advised the mine boss to suspend operations until roof was made safe, manholes cleaned out, and trolley wire guarded as required by law.

Edgar No. 2.

Located same place as No. 1, coal dumped over same tippie. Robert Nicholson, Dillonvale, O., mine boss; 185 miners and 45 day men employed. Visited April 13th, ventilation very poor; ordered same improved. August 19th, ventilation worse than on former visit, being so foul that a lamp would scarcely burn. Orders were given to cease operations until a sufficient volume of air was provided and maintained to comply with law and keep the mine in a healthy condition. August 31st, operations resumed after a few days' suspension; conditions improved. November 31st, opening made between the two mines; quality of air improved; requested an opening made on east side of the mine and ordered 9, 10 and 11 west entries timbered.

Dunglen No. 1.

Located at Dunglen, on the W. & L. E. R. R. Operated by the Morris Poston Coal Co., Cleveland, O. Chas. Thomson, Dunglen, O., superintendent; Wm. Weekley was mine boss up to the first of September. Drift, No. 8 vein, 5 feet thick, motor haulage; machine mining; fan ventilation; 125 miners and 36 day men employed. Visited February 11th. Orders given to place trolley wire in compliance with law. April 21st, ventilation deficient; haulways dangerous, on account of loose top; several rooms found in about the same condition, and no attention paid to previous orders. Stopped motorman from hauling under dangerous roof, and gave orders to suspend operations until ventilation was restored and roof made safe. September 13th, investigated fatal accident. September 17th, again found conditions very unsatisfactory; electric wire hung without any regard for safety. Mr. Weekley's services as mine boss being dispensed with, Mr. Wilfred Sowden was in charge of the mine as mine boss. Being a man of good judgment and experience, he at once saw the necessity for improvement, and agreed to do his best to bring it up to that standard required by law. October 19th, ventilation improved, new doors and stoppings being built, and considerable timbering done. Requested that they continue to improve conditions.

Dunglen No. 2.

Coal dumped over same tippie as No. 1. Elmer Lyon, Dunglen, O., mine boss; 124 miners and 30 day men employed. Drift, No. 8 vein, 5 feet thick; motor haulage; fan ventilation. Visited six times during the year. Natural conditions as they exist are favorable for making this one of the best mines in the district, but no discipline is in force, every one doing about as they choose. The management themselves have very little regard for law, and are negligent in the performance of their duty. They were repeatedly requested to comply with the law regulating the conducting of electricity in mines, but continued to

ignore the request until prosecution was finally threatened if they continued to longer operate. Rather than be prosecuted, they suspended operations and complied with the law.

Dunglen No. 3.

This mine is connected with No. 1 and under the jurisdiction of the same mine boss.

Roby No. 2.

(Nos. 3, 4 and 5 Drifts.)

Located at Ramsey, on the W. & L. E. R. R. Operated by the Roby Coal Co., Cleveland, O. W. L. Moke, Adena, O., is superintendent; Samuel Cook, Ramsey, O., mine boss for the Nos. 3 and 5 drifts; Louis Murdock, same place, mine boss No. 4 drift. Ventilated by two 16-foot Brazil fans; mule and motor haulage; machine mining; 280 miners and 63 day men employed. Operations were suspended August, 1908, and resumed September 23rd, 1909. During this time the mines were kept in condition to resume on short notice. The No. 5 drift is not yet in operation, but men are employed keeping it in condition to resume at any time. The condition at these mines, as far as roof is concerned, is better than the No. 1 mine. The following shows the amount and kind of timber used:

Drift No. 3, main entry, 175 steel I-beams; 300 8x10 inch oak timbers
Drift No. 3, 1 and 2 south, 112 steel I-beams; 210 8x10 inch oak timbers
Drift No. 4, main entry, 134 steel I-beams; 190 8x10 inch oak timbers
Drift No. 4, 1 south entry, 85 steel I-beams; 151 8x10 inch oak timbers.
Drift No. 5, main entry, 212 steel I-beams; 190 8x10 inch oak timbers
Drift No. 5, No. 2 south, 116 steel I-beams; 106 8x10 inch oak timbers

Five visits made, as follows: No. 3 drift, June 30th, October 21st; No. 4 drift, June 30th and December 13th; No. 5 drift, December 13th. Conditions approved on each visit.

United States Mines.

Located at Bradley; transportation W. & L. E. and L. E. A. & W. R. R., and at Plum Run, on the C. & P. R. R. H. E. Willard, Cleveland, O., general manager. Operated by the United States Coal Co., Cleveland, O. Wm. Wagner, Bradley, O., superintendent of the Bradley mines; H. C. Keim, Rhodesdale, O., superintendent of the Plum Run mines. Drift opening, No. 8 vein, 5 feet thick; machine mining, motor and mule haulage; each mine equipped with a 7-foot Stine fan. These mines have a very tender roof, and great quantities of heavy oak timbers are used to support the roof on the entries, a sufficient supply of which is always kept on hand at the mines to be used whenever required.

Bradley No. 1 District.

D. M. Harper, Bradley, O., mine boss. Employs 150 miners and 38 day men. Visited January 27th, May 18th and October 13th, and on each occasion conditions fair. What is known as the No. 3 section of this mine has a very bad top, but by the use of large quantities of timber the roof is generally well supported.

Bradley No. 2 District.

Wm. Adamson, Bradley, O., mine boss. Employs 100 miners and 34 day men. Visited January 27th. Investigated fatal accident. Inspected mine and ordered trolley wire in main entry raised closer to the roof. June 24th, orders of previous visit complied with; found ventilation very poor; requested this remedied. October 14th, new 7-foot direct connected Stine fan installed; ventilation excellent, and mine in very satisfactory condition.

Bradley No. 3 District.

David Jack, Bradley, O., mine boss. Employs 100 miners and 30 day men. Visited three times during the year, and on each occasion ventilation and general conditions were very commendable. Recommended fan removed from the interior of the mine to a suitable place on the surface.

Bradley No. 4 District.

John Newton, Bradley, O., mine boss. Employs 125 miners and 30 day men. Visited 3 times during the year. This mine has some very bad roof, but the man in charge realizes this, and timbers accordingly. The mine is generally found in very good condition.

Plum Run No. 1.

J. H. Grey had charge of these mines as superintendent until October 15th, when he resigned and was succeeded by H. C. Keim. Samuel Phillips resigned as mine boss at the same time, and was succeeded by John Huddy; 85 miners and 31 day men are employed. Visited May 21st; orders given to timber 3 and 4 west entry. July 22nd, tested two pairs of hopper scales, and found them correct. November 15th, orders of previous visit complied with and conditions approved.

Plum Run No. 3.

John Grey had charge of the inside until October 15th, when he resigned, and the mine was then placed under the care of John Huddy. Visited May 20th and November 16th; condition of drainage, ventilation and general safety very unsatisfactory. Recommended that the drainage be improved, the necessary timbering done, and the main entry driven out for ventilation.

Plum Run No. 4.

H. L. Kirkpatrick, mine boss; 159 miners and 57 day men employed. Visited May 19th; found in very bad condition. Ordered shaft sunk on the east side, and the one on the west side cleaned out; also gave orders to timber 5 and 6 east, 3 and 4 east, 1 and 2 west, 9 and 10 east, and passway, and drain haulways. October 12th, orders of previous visit not complied with. Company given 20 days in which to comply with orders given May 19 or suspend operations. November 17th, mine under new management, orders complied with in every respect, and conditions very satisfactory. Airshaft sunk on east side; old one cleaned out on the west, haulways fairly well timbered, sumps made, and haulways fairly well drained.

Jefferson Nos. 1, 2, 3 and 4, and Cabbage Run.

Nos. 1 and 2 located at Piney Fork. Nos. 3 and 4 located at Harper, all on the L. E. A. & W. R. R. Operated by the Jefferson Coal Co., Cleveland, O. John Simpson, Piney Fork, O., is general manager. Wm. Simpson, same place, is superintendent. Mr. Simpson is a strict disciplinarian, and sees that orders are obeyed, with good results, both for the welfare of the employes and the good of the company, and it is pleasing to report that the laws of the State and orders of the department are generally complied with. These are drift openings, No. 8 vein, 5 feet thick; motor and mule haulage; machine mining. Each mine equipped with a 15-foot Brazil fan.

Jefferson No. 1.

Employs 182 miners and 42 day men. H. D. Albaugh, Piney Fork, O., mine boss. Visited four times during the year. During this time brick stoppings have been built between the main entries and air courses; also two brick overcasts reinforced with iron. Steel I-beams have been taking the place of timber on the main entries. Conditions have continued to improve throughout the year. On last visit made, December 1st, conditions were very good.

Jefferson No. 2.

Employs 175 miners and 35 day men. Richard Wilson, Piney Fork, O., mine boss. Four visits made. Conditions improved over that of the previous year. Two new openings have been made at the head of the workings, and the old stoppings between the main entry and air course replaced with brick and cement. Steel I-beams are being used on the entries in place of timber, which in my opinion is a step in the right direction.

Cabbage Run.

Under the same management as No. 2. Coal hauled through the No. 2 mine to the same tippie; 17 miners and 3 day men employed. Visited February 10th; conditions excellent; second opening being made. September 21st, second opening completed. Conditions about the same as on former visit.

Jefferson No. 3.

Employs 200 miners and 43 day men. Otis Jacoby, Harpersville, O., mine boss. Visited February 18th; requested that ventilation be increased on the main and east side. April 13th, brick and cement stoppings being built between main entry and air course; ventilation improved. June 3rd, investigated serious accident. September 27th, investigated fatal accident, inspected mine; found ventilation good, but timbering neglected; requested that this be attended to at once.

Jefferson No. 4.

Suspended during the entire year.

Witch Hazel.

Located at Florencedale, on the L. E. A. & W. R. R. Operated by the Witch Hazel Coal Co., Youngstown, O. Geo. Evans, Florencedale, O., superin-

tendent; Julius Grimm, same place, mine boss. Drift, No. 8 vein, 5 feet thick; motor and mule haulage; fan ventilation; machine mining; 70 miners and 20 day men employed. Visited February 15th; flooded; no inspection. May 6th, opening made at head of main entry; fan moved to this point; requested that an opening be made at the head of 4th east. Conditions very good. September 23rd, opening made on 4th east; conditions very satisfactory.

NOTE—The surface over this coal is so thin that the mine generally becomes flooded during the spring months.

Wabash.

Located at Parlett, on the Wabash R. R. Operated by the Wabash Coal Co., Cleveland, O. Slope opening, No. 8 vein, 5 feet thick; mule haulage; fan ventilation; machine mining; 45 miners and 23 day men employed. W. P. Bates, Parlett, O., superintendent; David Murle, same place, mine boss. Visited January 28th; condition approved. June 25th, orders given to timber 2nd and 3rd west entries. September 24th, air course choked by falls; requested same cleaned up. December 22nd, ventilation deficient; orders given to speed fan, sink an air shaft at the head of the main entry, and have the necessary timbering done.

Amsterdam.

Located at Amsterdam, on the L. E. A. & W. R. R. Operated by the I. & O. Coal Co., Cleveland, O. Richard Jones, superintendent; Edw. Lee, mine boss, both of Amsterdam, O. Shaft, 276 feet deep, No. 5 vein, 4½ feet thick; ventilated by a 14-foot Robinson fan; motor and mule haulage; machine mining; 120 miners and 62 day men employed. Visited February 17th; requested ventilation increased on north side. June 15th and 16th, inspected previous to resuming operations after a suspension of several months; standing gas found in No. 28 room, 4th west, on top of a fall; removed same day. As the air courses were choked, curtailing the ventilation, it became necessary to change the position of certain doors, and carry the air to the working places through the gobs. As the mine was free from standing gas, permission was given to resume, with the understanding that these changes be made at once. July 21st, tested scales and found them correct. August 26th, doors changed as suggested, and good results obtained, the entire current of air passing through the old workings, keeping them clear, decreasing the friction, and increasing the volume of air at the face of the workings. November 19th, the Nos. 3 and 12 rooms on the 1st southwest entry having caved, gas had accumulated on top of the falls, but this was being diluted as fast as possible; otherwise, conditions were as good as circumstances and the method of working would permit. In order to keep the entries in reasonably safe condition for travel and haulage it is necessary to keep a large force of timbermen employed at night at this kind of work. The records kept in the office at the mine show that 1,086 steel I-beams and 500 6x8 inch oak timbers have been used for this purpose from the first of June, 1908, up to the present time. Under the present method of mining, those in charge are doing all that can be done to keep the mine in a safe condition, and deserve credit for their able management.

Zerbe.

Located at Amsterdam, on the L. E. A. & W. R. R. Operated by the Ohio & Penna. Coal Co., Cleveland, O. Geo. Wagoner, Amsterdam, O., superintendent.

ent; John Lees, same place, mine boss. Shaft, 185 feet deep to the No. 5 vein, 5 feet thick; ventilated by a 20-foot Brazil fan; mule and motor haulage; machine mining; about 180 miners and 55 day men employed. Visited January 14th and 15th. No. 2 room, 9 east, caved; standing gas found in it, ordered removed. February 26th, ordered mine boss to keep brattice closer to the face, and see that all necessary stoppings were built, as some evidences of neglect were found. May 4th, previous orders complied with, ventilation good; found machine being operated without shields and stopped it from operating. June 18th, conditions very good. August 27th, ordered men taken out of north entry until necessary stoppings were built to carry the air to the face; order complied with. November 20th, old workings examined and found free from standing gas. Conditions very satisfactory.

Rice.

Located two miles southeast of Bergholz, O., on the L. E. A. & W. R. R. Operated by the Rice Coal Co., Cleveland, O. R. E. Roush, Bergholz, O., superintendent; Evan Griffith, same place, mine boss. Slope, No. 5 vein, 5 feet thick; ventilated by a 15-foot Brazil fan; motor and mule haulage; employs 170 miners and 60 day men. This mine has an excellent roof, and such things as falls are practically unknown, unless the coal should happen to be worked out too close to the creek, where the roof is not so good, and on several occasions has fallen to the surface. Visited four times during the year and found in very good condition.

X. L.

Located at Bergholz, O., on the L. E. A. & W. R. R. Operated by the Bergholz Coal & Electric Light Co., Bergholz, O. J. S. McKeever, superintendent; John Peterson, mine boss, both of Bergholz, O. Slope, No. 6 vein, 3 feet thick; motor and mule haulage; machine mining; single entry system; ventilated by a 9-foot steam fan and a 4-foot electric fan. About 90 miners and 33 day men employed. Visited four times during the year. During that time the old workings adjoining were tapped by drill holes; later cut into and drained off, so the danger from that source is eliminated. Conditions good for single entry.

Elizabeth.

Located two miles north of Amsterdam, O.; transportation, L. E. A. & W. R. R. Operated by the Wolf Run Coal Co., Cleveland, O. Val Cox was superintendent, and Jas. Campbell, mine boss, until October 15th, when both resigned. The mine was then placed under the supervision of R. T. Price, of Cleveland, O., and Harry Marson, of Wolf Run, O. Shaft, 293 feet deep, No. 5 vein, 4 feet 8 inches thick. Motor haulage; machine mining; ventilated by a 14-foot Cappell fan. About 156 miners and 50 day men are employed. Visited February 16th; found standing gas in No. 2 room, second east; ordered same removed; advised that face entries be driven from main west, to head off 1 and 2 N. W., which were squeezing. February 25th, previous orders complied with, gas removed; ordered three shifts placed at work on face entries, which were being driven to head of squeeze. March 1st, visited in company with Chief Inspector Geo. Harrison, District Inspectors W. H. Miller and Alex. Smith; some advice given in regard to drawing pillars in section affected by the squeeze. May 5th and June 17th, found in very good condition. August 3rd and 4th, owing to the ventilation being cut off from some old workings on

the east side; gas had accumulated in No. 9 room, 3rd east, also in room 16, same entry; both had caved in; the gas was ignited in one of these places on the 2nd, but fortunately with no serious results. At my request, two men were employed to watch these old workings until arrangements could be made to thoroughly ventilate them. August 24th and 25th, old workings thoroughly ventilated and free from standing gas; fire found in No. 1 room, 2 S. W., but extinguished by the aid of chemical fire extinguishers, which are kept in the mine. October 28th, automatic door placed on top of the shaft and an abundance of air being distributed through the mine. November 3rd and 4th, visited in company with Inspector W. H. Miller; a thorough inspection of the old workings was made and found free from standing gas and well ventilated. Gave the following orders: All old workings must be examined at least three times a week; all dust removed from the mine, and dry places sprinkled; miners must not be allowed to load dust on top of car. Recommended that any one observing any dangerous condition to immediately report to mine boss. November 18th, investigated fatality which caused the death of Paul Mychok.

Diamond.

Located two miles west of Yellow Creek, on the C. & P. R. R. Operated by W. E. Smith, Wellsville, O. J. C. Close had charge until April 5th, when he was killed by a fall of roof. Isaac Thomas, Irondale, O., then took charge. Slope, No. 3 vein, $3\frac{1}{2}$ feet thick; mule haulage, machine mining. Fan ventilation; 14 miners and 6 day men employed. Both coal and clay is mined. Four visits made during the year. Since Mr. Thomas took charge, the east side, which was squeezing, has been abandoned; a new air course driven to the bottom of the air shaft, and conditions improved.

Creek Vein No. 3.

Located at Irondale, on the C. & P. R. R. Operated by the East Ohio Sewer Pipe Co., Irondale, O. W. E. Williams, Irondale, O., superintendent. Drift, No. 3 vein, $3\frac{1}{2}$ feet thick; mule haulage; pick mining; fan ventilation; 7 miners and 1 day man employed. Three visits made. During this time a 7-foot fan was installed and ventilation improved.

Dorothy.

Located at Rayland, on the W. & L. E. R. R. Drift opening, No. 8 vein. Visited March 26th; found that operations were suspended, remaining so until the close of the year.

Mt. Pleasant.

Located at Mt. Pleasant. Operated by Frank Snyder, same place. Drift, No. 8 vein, 5 feet thick; mule haulage; pick mining; furnace ventilation; 8 miners and 1 day man employed. Visited August 30th and December 3rd. Found in good condition.

Nicholson.

Located at Dillonvale, O. Operated by P. R. Nicholson Co., Dillonvale, O. Drift, No. 8 vein, 5 feet thick; mule haulage, pick mining, furnace ventilation; 7 miners and 1 day man employed. Visited September 20th; second opening completed and mine in excellent condition.

CLAY MINES.**East Ohio.**

Located at Irondale, on the C. & P. R. R. Operated by the East Ohio Sewer Pipe Co., Irondale, O. W. E. Williams, Irondale, superintendent. Shaft, 67 feet deep, to the No. 1 seam of clay, which is 17 feet thick. Mule haulage; fan ventilation; about 8 miners and 6 day men employed. This mine has an excellent roof; visited twice during the year and found in good condition.

Standard.

Located at Irondale, on the C. & P. R. R. Operated by the Standard Firebrick Co., Pittsburg, Pa. L. N. McDaniel, Irondale, superintendent. Drift, No. 3 vein, 9 feet thick; mule haulage; fan ventilation; 6 miners and 1 day man employed. Visited three times, and on each occasion found in good condition. On the 10th of June, Chas. Buck was seriously burned by the explosion of a keg of powder while filling a cartridge previous to charging a hole.

Dando. -

Located at Hammondsville, on the C. & P. R. R. Operated by the Irondale Fire Brick Co., Irondale, O. Fred Dando, Irondale, O., superintendent; Edw. Grimes, Van Port, Pa., mine boss. Slope, No. 3 vein of clay, 10 feet thick; mule haulage; fan ventilation; employs 11 miners and 3 day men. Visited twice and found in good condition.

SMALL MINES.**Ainscough.**

Operated by Thos. Ainscough, Emerson, O. Drift, No. 8 vein, 5 feet thick; mule haulage, furnace ventilation; 6 miners and 1 day man employed. Visited March 22nd and September 29th. Conditions fair.

Curriers.

Operated by F. W. Curriers, Ramsey, O. Drift, No. 8 vein, 5 feet thick; 3 miners employed. No ventilation; ordered air course driven.

Galbraith.

Operated by L. E. Foster, Smithfield, O. Drift, No. 8 vein, 5 feet thick; 4 miners employed. Visited April 12th; conditions fair.

Garrison.

Operated by Howard Rish, Smithfield, O. Drift, No. 8 vein, 5 feet thick; 3 miners employed. Visited April 12th; conditions fair.

MINES VISITED IN OTHER DISTRICTS.

McNab, Columbiana County.

Big Walnut, Columblana County.

Delmore, Columbiana County.

Fort Pitt, Belmont County.

TENTH DISTRICT

L. D. DEVORE.

COMPOSED OF A PORTION OF BOTH BELMONT AND JEFFERSON
COUNTIES.

Hon. Geo. Harrison, Chief Inspector of Mines, Columbus, Ohio:

Dear Sir:—In compliance with the mining laws of the State of Ohio, and in accordance with the custom of the Department, I herewith submit to you for your consideration my first report of the Tenth Mining District of Ohio, covering a period of eight months, beginning May 1st, 1909, and ending December 31st, 1909.

The 10th inspection district covers a portion of Belmont and Jefferson counties, known as the River front, and extends from Pipe Creek, in Belmont County, to Yellow Creek, in Jefferson County.

During the period covered by this report, 162 visits were made; quite a number of minor improvements were made; all permanent improvements, in most instances, were made as fast as conditions would permit, as further noted in this report.

Owing to the extensive drilling for oil and gas in the Steubenville field, and the abandoning of wells in the Mingo Jet. field, it was necessary for me to spend a great amount of time in those fields looking after the sealing and plugging of abandoned wells and the safety of those drilled through the opening of the mines. I believe that some action should be taken looking to the protection of the miners, as the present laws are entirely inadequate to cover the leasing and drilling for oil and gas.

I regret to note the large number of fatalities which have occurred in the short space of eight months, 10 of our craftsmen meeting death from different causes in the mines, 6 of which occurred in Belmont County and 4 in Jefferson, a detailed account of which will be found in this report.

I am of the opinion that if air shafts were sunk at the interior of the mines it would be more economical in the matter of ventilation, and would prevent the occurrence of any calamity such as took place at Cherry, Ill.

With few exceptions, work was very slack throughout the summer months, coal selling at a very low price, making it very difficult, in some instances, to secure the number of improvements considered necessary.

With the advent of greater activity in the fall trade, another drawback was encountered in the shortage of cars, on account of which the miners did not work over half time, and if a suggestion would be made advising the closing of a mine, the miner would plead for the work.

Strange to say, but nevertheless true, is the fact that the most opposition to the placing and keeping of shields on mining machines originated from some of the cutters, who claimed that they were a drawback to them.

The inferior copper tools placed on the market by some companies, who appeared ever ready to take advantage of the law, caused a great deal of trouble for the inspectors and dissatisfaction and expense to the miners.

A great deal has been said about the amount of workable coal that is left and lost forever in the mines in the No. 8 seam, and it is my belief that not more than 55 or 60 per cent of the coal is taken out. I believe some provision should be made in order that we, as State officers, and working in the interest of the State, should be empowered to see that all workable coal is removed from the mines.

It was gratifying to note that Dr. J. A. Holmes, of the U. S. Geological Survey, in his lectures in the State, touched very forcibly on this subject and pointed out a good remedy for it.

My relations with both operators and miners, with very few exceptions, have been very friendly, and I appreciate very much their co-operation for better conditions.

In conclusion, I desire to express to you, and through you to all members of the Department, my hearty and most sincere thanks for your ever-ready and able advice and the many courtesies shown while a member of the Department.

Respectfully yours,

December 31st, 1909

L. D. DEVORE,
R. D. No. 2, Bellaire, O.
Inspector Tenth District.

NOTE—When not otherwise mentioned, it will be understood that No. 8 seam is the seam worked, and will average from 5 to 5½ feet in thickness. All mines are machine mines, with fan ventilation, unless otherwise specified.

BELMONT COUNTY.

Johnson.

Located at Pipe Creek. Owned and operated by Johnson Coal Co., Bellaire, O. C. & P. R. R. Slope opening, 89 miners and 26 day men employed. Geo. Johnson, Dillies Bottom, superintendent; Jas. Cook, Shady Side, O., mine boss. Five visits made. May 19th, mine in fair condition; ventilation not being carried to the faces in all cases, as it should be; second outlet not completed, not equipped with stairs, and otherwise out of order. July 14th, conditions improved, with exception of the escapement way, very little progress being made in this direction. H. W. Davis, Bellaire, O., succeeded Geo. Johnson and James Cook, as superintendent and mine boss. September 23rd, mine in fair condition, some progress being made toward making escapement way available for travel. October 21st, investigated fatal accident of Paul Kaher, who was injured October 19th, and died same day; while making preparations to set post, stone fell. November 23rd, condition of mine good, outlet being lined with brick and cement in order to make it dry. Stairs will be placed in a very short time. Credit is due Mr. Davis, as he has increased the output and made improvements all along the line. Compressed air and electric machines are in use.

Big Run.

Located at Ault, C. & P. R. R. Owned and operated by the J. W. Gorrell Coal Co., Alliance, O. Slope opening; 60 miners and 18 day men employed. D. B. Brooks, Bellaire, O., superintendent; D. C. Morris, same place, mine boss. Conditions fair. Stairs in escapement way not satisfactory, being built of too light material; directed that they be put in safe condition. This inspection was made in company with Mr. Lot Jenkins, of the 8th district. July 15th, condition of mine fair. Jos. Milner, Shady Side, O., succeeded D. B. Brooks as superintendent, and G. W. Johnson D. C. Morris as mine boss. September 20th, conditions fair. November 15th, mine in fair order; wires being put in place preparatory to installing motor. Stairs in shaft much improved. December 31st, conditions fair; manholes ordered made along motor road; wire to be guarded for protection of men and mules. This mine generates some fire-damp. Five visits were made.

Clifford.

Located at Dille, on main line of C. & P. R. R. Slope opening, owned and operated by the Fort Pitt Coal Co., Pittsburg, Pa. Employs 82 miners and 22 day men; coal shipped by both river and rail. A. G. Leonard, Moundsville, W. Va., superintendent; Michael Wasily, same place, mine boss. Visited May 10th in company with Lot Jenkins, of the 8th district; general conditions of mine fair; men were all supplied with copper tools, but of an inferior quality; directed them exchanged, and as Mr. Leonard had furnished the tools he agreed to comply with the request. Three and 4 west entries were in danger of intersecting with old works, in which there was a possibility of standing

gas. Directed that holes be bored in advance. July 16th, conditions good. Visited August 4th, at request of company, conditions being such as to require more steam power, as they were hampered for room, on account of the Ohio river on one side, the main line of the C. & P. R. R. on the other, and a bad slip at the back. This made it impossible for them to place the boiler the lawful distance from the slope; however, the matter was taken up with the head of the department, and on September 15th, in company with Mr. Geo. Harrison, chief inspector; Thos. Morrison, inspector of the 9th district, and Lot Jenkins, of the 8th, the mine was visited, and after carefully going over the situation we agreed to permit them to place their boiler on the foundation erected, which placed it within the 60-foot limit, 50 feet from the mouth of the slope; provided that a third opening be made and maintained, so that the men would be supplied with two ways of ingress and egress in case of accident. This the company agreed to do. In case of failure on their part to carry out this order permission to operate would be rescinded. September 21st, mine in fair condition, Edw. Cooley having succeeded Mike Wasly as mine boss. October 22nd, conditions fair; men all have lawful copper tools. November 24th, ventilation good. General conditions fair. Manway to 3rd outlet in good order; directed door attendant be placed at 3 and 4 east and west doors. On Dec. 16th, investigated fatal accident to Sylvester Cooley, machine man, who was instantly killed December 15th at 6:30 p. m.; just stepped through 3 east door as motor-man was pushing 11 loaded cars into 3 east, and was caught between car and timber, in some manner taking him through a 6 inch space.

Pultney.

Located one mile south of Bellaire, Ohio, C. & P. R. R. Slope opening. Owned and operated by the Cambria Mining Co., Toledo, Ohio. T. H. Huddy, superintendent; Wm. Boring, mine boss, both of Shady Side, O.; 175 miners and 65 day men employed. Five visits made. July 27th, strike still on; inaugurated April 1st. Trouble arose over measurement and handling of stone. September 2nd, condition of mine not up to standard, on account of brattices, which were in poor condition, owing to long idleness. Found mine resuming operations after a five months' suspension, due to the strike. October 11th investigated fatal accident to Luther Baker, who was instantly killed by fall of stone in room 23 on 8th west entry. He was working out middle shot in room when stone fell. November 8th, mine in fair condition; breakthroughs not kept open at faces; advised that this be done. G. S. Jones succeeded T. H. Huddy as superintendent. December 23rd, conditions fair; breakthroughs being kept open at the faces.

Empire No. 1.

Situated at Bellaire, O. Drift opening, C. & P. R. R. Transportation, rail and river; 251 miners and 71 day men employed. Owned and operated by Rail & River Coal Co., Pittsburg, Pa. Wm. Maloney, Bellaire, O., superintendent; Owen Donahue, same place, mine boss. Six visits made. May 12th, ventilation fair; condition of mine, not the best, dust being allowed to accumulate on all passways and along the motor road. This inspection was made in company with Lot Jenkins, of the 8th district. Wiring was in poor and dangerous condition all along motor line, to the extent that it was deemed necessary to advise with the Department that a 30-days' notice be served on the management, in order that the wire should be placed in a more safe condition. May 17th, found machines being operated without shields; breakthroughs

being made in entries, but brattices being neglected. June 21st, ventilation fair; wire on motor road rehung, and in fair condition, and some dust being removed. August 2nd, investigated fatal accident to Manuel Baltrando, who was fatally injured by fall of stone in No. 6 west entry, July 30, and died while being removed from the mine. Only entrymen were being employed on this visit. September 27th, ventilation fair; conditions somewhat improved, with the exception of dust, in which there was very little change. September 30th, tested scales and found correct. November 18th, mine was just working out of what is known in the No. 8 seam as snappy coal, which has given the management a great deal of trouble and expense. Condition of mine very unsatisfactory; breakthrough law being violated, men working in dangerous places ahead of air, and with only one way of escape; brattices unlawfully made; motor road very dirty and dusty; passways and other entries filled with dust; manholes in dangerous places, filled up. Directed that the dust must be removed from the mine and the law complied with.

Empire No. 2.

Located south of Bellaire, O. Slope opening; transportation, C. & P. R. R. Owned and operated by same company as Empire No. 1. Wm. Maloney, Bellaire, O., superintendent; John Eagan, same place, mine boss; 186 miners and 47 day men employed. Four visits made. May 21st, mine in fair condition. July 22nd, men were all supplied with copper tools. Condition of mine fair. September 28th, mine idle, having been suspended for 35 days, and only a few men working, getting ready to resume operations. Conditions fair. November 17th, timbers at mouth of slope in bad condition; too much dust had been allowed to accumulate on motor road and passways; no brick or cement used for stoppings in this mine. Aside from these irregularities, conditions were fair. Advised the law complied with.

Hall & Gilhooley.

Located at Bellaire, O. Drift opening, domestic mine. P. F. Gilhooley, Bellaire, O., superintendent; J. D. Hall, mine boss; 9 miners and 1 day man employed; machine mine, receiving power from street car company. Two visits made. Mine in first-class condition; law complied with, and no suggestions necessary.

Nail Mill.

Located at Bellaire, O. Drift opening, owned and operated by the Carnegie Steel Co., Pittsburg, Pa. Coal consumed at the Bellaire mill; 37 miners and 13 day men employed. B. F. Marling, Bellaire, O., superintendent and mine boss. May 31st, in company with Lot Jenkins, of District No. 8, investigated fatal accident to Nic Geeta, a driver, who was instantly killed on May 29th by being caught with loaded trip; deceased was coming onto passway, and in some manner fell off or was knocked off his trip. June 4th, conditions good. August 13th, new passway was being made and extending motor line. October 8th, conditions good. December 17th, motor road cleaned out; manholes newly whitewashed, and conditions approved. Much credit is due Mr. Marling for the condition in which this mine is kept.

Edge Hill.

Located at Bellaire, O., on C. & P. R. R. Drift opening, operated by A. J. Morgan, Bellaire, O. Jacob Long, same place, mine boss; 78 miners and 12

day men employed. May 28th, ventilation poor; wire in poor condition; No. 2 left entry 100 feet ahead of air; ordered it stopped. Furnace ventilation was inadequate. Conditions were such that I recommended a 30 days' notice in which to install some means of ventilation and general improvements, or it would be necessary to close the mine. June 29th, mine much improved; ventilation fair; 6-foot electric Scott fan installed. August 11th, brattices leaking and air not reaching the men. Dispute arose over the shielding of machines. August 17th, in company with Lot Jenkins, of the 8th district, at request of the chief inspector, visited mine to inspect shields. Investigation proved the position I maintained to be the right one. Shields were then changed in accordance with my request. September 30th, mine in fair order; directed ventilation be better conducted. November 19th, condition of mine good; ventilation good; breakthroughs being over regular distance, and directed them made in accordance with the law; ordered no powder be taken in the mine while power was on the wire.

West Wheeling.

Situated at West Wheeling, C. & P. R. R. Owned and operated by the West Wheeling Coal Co., Bridgeport, O. Drift opening; 42 miners and 14 day men employed. Wm. Johnson, Bridgeport, O., superintendent and mine boss. Five visits made. May 4th, ventilation and conditions fair, except on 1 and 2 west, which was affected by a squeeze; breakthrough law being violated. This inspection was made in company with Lot Jenkins, of the 8th district. May 20th, mine improved. July 20th, miners all supplied with copper tools. Conditions fair. September 14th, conditions fair; 1 and 2 west abandoned, and the coal being hauled around through the north faces. September 22nd, tested scales; found inaccurate. October 6th, after an expert had gone over them, made another test; still out of order. December 7th, conditions good. This company recovers more workable coal than any company in this district, maintaining two tracks in every alternate room, and taking out the pillars on returning.

Aetna Standard.

Situated at Aetnaville, O. Owned and operated by the American Sheet & Tin Plate Co., Pittsburg, Pa. Drift opening, furnace ventilation. Wm. Fitzgerald, Tiltonsville, O., superintendent and mine boss; 36 miners and 10 day men employed. Three visits made. May 7th, conditions fair. August 30th, 6 day men working; mine idle, owing to strike at mill where coal is consumed. December 10th, mine still idle; 6 men employed on improvement work. Condition fair.

Laughlin.

Situated at Martins Ferry, O. Owned and operated by the American Sheet & Tin Plate Co., Martins Ferry, O. Drift opening; 50 miners and 16 day men employed. Coal is consumed at the Martins Ferry mill. Edw. Hite, superintendent and mine boss. May 18th, mine in fair condition, except ventilation not good, owing to changing the system of working, and in several places canvas was in use where they expected to place automatic doors later on. Mine idle at present, and has been since July 1, owing to tin workers' strike.

Whitaker-Glessner.

Located at Martins Ferry, O. Owned and operated by the Whitaker-Glessner Co., Wheeling, W. Va. H. W. Kasley, Wheeling, W. Va., is superin-

tendent; Peter O'Malley, same place, mine boss. Drift opening; pick mine; 23 miners and 7 day men employed. Five visits made. May 18th, found mine in good condition. June 14th, investigated fatal accident to Peter O'Malley, the mine boss, who was injured by being caught with loaded car against low timber on main entry, on June 7th, and died on same date. He was standing on side of the entry when driver passed; jumped onto the last hitching, saw a lump of coal about to fall off; as he was reaching to place the lump, the trip came under a low timber, catching him with his left breast against the car, badly mashing his breast. He walked out of the mine. Deceased was a good, experienced and practical man, well known in eastern Ohio, and well liked by all who knew him; frank and plain in his ways, and amongst the older miners known as one of the "old guard." July 28th, found Richard Walker, Martins Ferry, O., in the position made vacant by deceased. Condition of mine good. September 29th and December 13th, conditions approved; no instructions being necessary.

Florence.

Located $1\frac{1}{2}$ miles west of Martins Ferry, O. Owned and operated by Y. & O. Coal Co., Cleveland, O. C. & P. R. R. Drift opening; 247 miners and 65 day men employed. W. H. Sharp, Martins Ferry, O., superintendent; Wilfred Sowden, same place, mine boss. June 28th, mine at face of workings in good condition. Two hundred feet of main haulage in dangerous condition for want of timbering. No. 7 face stopped for lack of timber. August 12th, No. 7 face timbering completed; main haulage fairly well timbered up; conditions fair. August 19th, east side in poor condition on account of bad top and water coming from old works. November 3rd and 4th, conditions fair, Carl Ryan having succeeded Wilfred Sowden (resigned) as mine boss; gave instructions that new outlet on west side must be completed. November 23rd, investigated cause of explosion in which Andy Demity and Mike Mistake were painfully burned; fan had not been in operation for 24 hours; entries on the raise had just cut a clay vein. These men went into the mine before the fan had started. They walked to face of entries and gas ignited. November 30th, visited mine in company with M. D. Ratchford, to settle controversy as to where snappers or trip riders should ride.

Gaylord No. 1.

Located north of Martins Ferry, O., on main line of C. & P. R. R. Drift opening; owned and operated by Pittsburg & Cleveland Coal Co., Cleveland, Ohio. T. E. Sauters, Martins Ferry, O., superintendent; Jno. Gallagher, same place, mine boss. Four visits made: 134 miners and 45 day men employed. May 24th, conditions fair; motor road difficult to keep up, as it passes through old works, and wiring defective. July 23rd, ordered timbering, rechanging of wire, and motor line improved. September 24th, conditions much improved. November 22nd, motor line much improved, timbering and cleaning up, changing return wire from bottom to top, and placing it in lawful condition.

Gaylord No. 2.

Owned and operated by same company as No. 1. T. E. Sauters, Martins Ferry superintendent; W. D. Scott, Bridgeport, O., mine boss. Drift opening; 44 miners and 11 day men employed. Transportation, C. & P. R. R. Mine was opened up in 1907 with a temporary tiddle, and considerable entry driven; suspended in that year, and was idle until December 1st, 1909. November 9th.

new tippie just being completed, preparatory to running coal. December 24th, conditions first class; wiring being done in compliance with department's orders.

MINES EMPLOYING LESS THAN 10 MEN IN BELMONT COUNTY.

M. T. Garrett.

Located at Bellaire, O. Domestic mine, slope opening, rope and mule haulage, fan ventilation. Machine mine, employs 6 miners and 2 day men. June 18th, conditions fair. August 31st, mine not in good condition; main entry muddy; timbering needed on main haulage way; door on main entry leaking; fan churning the air; this was all promised to be remedied at once. M. T. Garrett is manager and mine boss.

Lee Woods. -

Located at Martins Ferry, O. Owned and operated by Woods & Son, Martins Ferry, O. Drift opening, furnace ventilation, machine mine; 6 miners and 1 day man employed. Domestic trade. June 23rd, in poor condition; ventilation poor; directed some means of ventilation installed. August 31st, ventilation bad; ordered furnace built without delay. December 13th, conditions improved; furnace built. Lee Woods is manager and mine boss.

Thos. Long.

Located at Bellaire, O. Owned and operated by the Long Coal Co., Shady Side, O. Shaft opening, 26 feet deep. Thos. Long, Shady Side, O., manager and mine boss. Machine mine, fan ventilation; 3 miners and 1 day man find employment. July 2nd mine in poor condition. September 3rd, mine very much improved; boiler very near the shaft. Domestic trade.

Bellaire Coal & Coke Co.

Located at Bellaire, O. Owned and operated by the above-named company. Drift opening, furnace ventilation. Pick mine; domestic trade; 6 miners and 3 day men employed. Two visits made. Some timbering needed on main haulage, which they promised to do without delay. Aside from this, mine in first class condition on both visits.

Pelky.

Domestic mine located at Bellaire. Abandoned.

Koehnline.

Located at Bridgeport, O. Drift opening, compressed air punching machine. Operated by the Koehnline Ice & Coal Co., Bridgeport, O. Exhaust steam ventilation. Seth Stephens, Bridgeport, O., manager and mine boss. Employs 3 miners and 1 day man. Domestic trade.

ANNUAL REPORT

Sheets.

Martins Ferry, O. Domestic mine, drift opening, fan ventilation. Owned and operated by the Sheets Coal Co., Martins Ferry, O. Mine place, superintendent and mine boss. Six miners and 2 day men. May 26th, conditions fair; water coming through from old entry, but drainage good. August 9th, visited mine by representatives of the Electrical Co., of Wheeling, W. Va. in order to give instructions regarding wiring. Mine conditions good. October 11th, everything in first class condition.

CLAY MINE IN BELMONT COUNTY.

Suburban Brick Co.

Located at Bellaire, O. Owned and operated by Suburban Brick Co., Wheeling, W. Va. C. H. Carpenter, Martins Ferry, O., superintendent; J. W. Flannahan, Bellaire, O., mine boss. Drift opening; employs 9 miners and 1 day man. Complaints having been filed with the Columbus office that dynamite was being stored in this mine, Chief Inspector Harrison promptly notified Lot Jenkins, inspector of the 8th district, and myself, to make an investigation. May 11th, dynamite being kept in compliance with former orders; mine in fair condition. August 16th, condition of mine fair; directed pipes which carried the air, extended nearer the faces. Driving is being done from outside of mine to intersect with entry on inside for a second opening.

JEFFERSON COUNTY.

Walnut Hill Nos. 1 and 2.

Located at Yorkville, O. Owned and operated by the O. & P. Coal Co., Cleveland, O. Drift opening, 132 miners and 44 day men employed. Wm. Neath, Yorkville, O., superintendent; Abel Armitage, same place, mine boss. On May 25th, the condition of the second outlet at No. 1 mine at head of workings was bad; motor road very wet and muddy. No. 2 opening, ventilation deficient; brattices out of order; directed this attended to. July 21st, investigated fatal accident to B. P. Finney, who was instantly killed by fall of stone. July 20th, in No. 1 Butt Room off of No. 6 room on 11 left entry, some improvements since last visit. October 4th, No. 1 mine at face of workings satisfactory; some timbering was needed on the motor road. No. 2 mine ventilation poor; ordered 11 and 12 right, and 11 and 12 left, double shifted to intersect, as it would benefit ventilation. November 29th, some improvements on motor line; 2nd outlet in No. 1 mine in poor condition. Ventilation in No. 2 mine strengthened, but affected with black damp, owing to neglect of brattices being put up. Gave instructions that there must be a general improvement all around. Transportation, C. & P. R. R.

Russell.

Located at Tiltonsville, O. Owned and operated by the Russell Coal Co., Tiltonsville, O. C. & P. R. R. Seth Williams, Tiltonsville, O., is superintendent

and mine boss. Drift opening; 89 miners and 21 day men employed. Four visits made: June 22nd, motor road very muddy; condition of mine otherwise fair. Miners were not complying with copper tool law, and directions were given that such must be done. August 23rd, conditions of mine fair; removing mud from motor road; men all supplied with copper tools. November 1st, condition of mine fair. December 21st, ventilation weak at times; an electric fan is in use, receiving power from the street car company, which at times runs down very weak, affecting the fan. Directed that the law must be complied with concerning material for brattices.

Rush Run No. 1.

Located at Rush Run, C. & P. R. R. Owned and operated by the Glens Run Coal Co., Cleveland, O. Howard Ulrich, Rayland, O., superintendent; John Cass, Rush Run, O., mine boss. Drift; 84 miners and 33 day men employed. Five visits made: June 15th, conditions fair. June 23rd, tested scales, found correct. August 6th, mine in fair condition; men all supplied with tools. October 5th and December 2nd, conditions fair; gave orders that breakthroughs at faces must be kept open. December 22nd, investigated fatal accident to Alex. Bora, who was instantly killed by fall of stone in Room No. 7 on 1st west entry; driver gave him car on dinner trip; went in first trip after dinner to pull the car, and found him under the stone, dead. He had just fired a shot, and had car half filled when accident occurred.

Rush Run No. 2.

Located three miles northwest of the No. 1 mine. Owned and operated by the Glens Run Coal Co., Cleveland, O. C. & P. R. R. Wm. Werker, Rayland, O., superintendent; B. F. Roberts, same place, mine boss. Drift opening; 133 miners and 31 day men employed. August 14th, investigated fatal accident to Chas. C. Bethel, boss timberman, who was instantly killed on August 13th by being caught between loaded car and rib at turn on No. 5 entry, just going into No. 6 west passway; when found, he was standing up between car and rib, dead. September 1st, mine just resumed operation. August 26th, after an idleness of eight months. Mine out of order. October 28th, mine much improved. December 15th, mine improved in way of cleaning up and timbering; the top is very tender in this mine, making it a very difficult matter to keep it in safe condition.

Rush Run No. 3.

Drift opening, located at same place and owned and operated by the same company. C. & P. R. R.. Wm. Werker, superintendent. Suspended all year.

Jean.

Located at Salt Run, C. & P. R. R. Owned and operated by the Blyth Coal Co., Pittsburg, Pa. Geo. Vandyke, Brilliant, O., superintendent and mine boss. Drift opening; 31 miners and 19 day men employed. May 27th, mine troubled with tender top and water; otherwise in good condition. June 30th, aside from tender top, condition of mine good. August 24th and October 29th, conditions good. December 14th, condition of mine good, considering the tender top.

LaGrange.

Located at Brilliant. Owned and operated by the LaGrange Coal Co., Brilliant, O. Shaft opening, No. 6 seam, $3\frac{1}{2}$ feet thick, and at a depth of 265 feet. Coal is consumed at electric power plant in Brilliant. Jas. Morgan, Brilliant, O., superintendent and mine boss. Nine miners and 8 day men employed. Machine mine, motor haulage. July 1st, in fair condition. August 27th, requested wire on motor road given attention and put in safe condition, as there were a number of hangers out. November 5th, mine idle; no inspection made. December 3rd, conditions of mine fair, excepting wire that was out of order in places; gave instructions that same must be placed in safe condition. This company is sinking a test well for gas down through the old works. Directed they have all the men out of the mine when they were drilling the well in, and not permit them to re-enter until an examination had been made and assured that conditions were safe.

Goucher.

Situated two miles west of Brilliant, O. C. & P. R. R. Operated by the Dexter Coal Co., Pittsburg, Pa. Drift opening. M. D. Gibson, Brilliant, O., superintendent; John Barth, same place, mine boss. Ninety-two miners and 29 day men employed. June 17th, mine in very poor condition; tested scales, found correct; gave instructions that conditions must be improved. August 6th, conditions very poor. September 17th, mine idle for repairs. October 7th, fan moved to new opening, which had just been completed, providing first class ventilation. Investigated fatal accident to Wm. H. Stock, who was injured in No. 7 room on 5 left entry on September 25th by fall of stone, and died October 5th from injuries. December 6th, mine in fair condition; ordered break-throughs kept open at faces. Wm. Pilkington succeeded John Barth as mine boss.

Pratt.

Located at Mingo Jet. Operated by Brettell Bros., Mingo Jet, O. Ted Brettell, superintendent and mine boss. Domestic mine. Drift opening; pick mine; natural ventilation; 12 miners and 2 day men employed. June 16th, condition of mine, fair. October 1st, in fair condition; advised some means of ventilation provided. December 8th, condition of mine, fair; ventilation poor. preparations being made to build furnace.

Kelley.

Located at Warrenton, O. C. & P. R. R. Suspended all year.

LaBelle.

Situated at Steubenville, O. Owned and operated by the LaBelle Iron Works, Steubenville, O. Shaft opening, 200 feet deep, No. 6 seam, which at this point is $3\frac{1}{2}$ feet thick. R. W. McCasland, superintendent, Steubenville, O.; Jas. Kenney, same place, mine boss. Machine mine, 159 miners and 33 day men employed. All the workings are on the West Virginia side of the river. Mine generates a small percentage of fire damp. September 7th, miners on strike; trouble arose over changing the conditions of cutting. Condition of mine, fair. Ventilation not carried to head of workings as it should be. This inspection was made in company with Karl F. Schoew, of the West Virginia

department. November 26th, ventilation very much improved, as stone brattices had been gone over with cement; other conditions fair; only a few men working. David Love of Steubenville, O., succeeded Jas. Kenney as mine boss.

High Shaft.

Located at Steubenville, O. Owned and operated by the Steubenville Coal & Mining Co., Steubenville, O. Shaft opening, 225 feet deep; No. 6 seam, $3\frac{1}{2}$ feet thick; coal used for domestic trade. Wm. Smurthwaite, Steubenville, O., superintendent; Matthew Cassner, same place, mine boss. Fifteen miners and 9 day men employed. August 25th, mine in fair condition. Oil wells which were being sunk through where the coal has been excavated were giving a great deal of trouble, letting in water and some escaping gas. October 20th, condition of mine, fair; wells that went through the open, still letting in some water. December 20th, condition of mine good; ventilation good; oil wells giving no trouble on this visit.

Forest City.

Located at Toronto, O. Owned and operated by the American Sewer Pipe Co., Akron, O. Drift opening, No. 6 seam, $3\frac{1}{2}$ feet thick. Coal is used at factory for burning the sewer pipe. W. B. Francy, superintendent; John Ferguson, mine boss, both of Toronto, O. Thirty-three miners and 13 day men employed. Regarded as a pick mine, although one compressed air puncher of the Ingersoll type is used in the main entry. Three visits: July 6th, October 14th and December 27th. Aside from a short distance on the main entry, where it seems to be pinched a little, the mine was found in first class order, Mr. Ferguson taking great pride in keeping good air at the faces of the workings.

Kaul-Oberkirch.

Located at Toronto, O. Owned and operated by the Kaul-Oberkirch Clay Co., Toronto, O. Drift opening, No. 6 seam, which at this point is three feet thick; 10 miners and 2 day men employed. Natural ventilation. Geo. Myers, Toronto, O., superintendent; Geo. Hamilton, R. D. No. 1, same place, mine boss. July 7th, condition of mine good. October 15th, ventilation not satisfactory; ordered furnace built at air shaft.

Calumet.

Situated at Toronto, O. Owned and operated by the American Sewer Pipe Co., Akron, O. Drift opening, Nos 6 and 7 seams, 3 feet thick; pick mine; 10 miners and 4 day men employed. W. B. Francy, Toronto, O., superintendent; Geo. Gloss, same place, mine boss. July 8th, mine in poor condition; no ventilation; ordered furnace in order in No. 6 seam, and air shaft sunk in No. 7 seam. October 15th, mine suspended. December 27th, still idle, no prospects

Stratton.

Located at Empire, O. Owned and operated by the Stratton Fire Clay Co., Empire, O. Coal is used for burning sewer pipe. Drift opening, furnace ventilation; No. 7 seam, $2\frac{1}{2}$ to 6 feet thick at this point. Employs 17 miners and 2 day men. H. E. Stratton, Empire, O., superintendent; Howard Vantilburg, Port Homer, O., mine boss. July 12th, in poor condition; ventilation poor; or-

dered same improved within three days, or it would be necessary to close the mine. July 19th, ventilation improved. August 20th, condition fair. October 20th, ventilation fair. C. C. Crisman was appointed to fill the position made vacant by the death of Mr. Vantilburg. December 28th, condition of mine fair; ventilation good.

American Sewer Pipe.

Located at Freemans, owned and operated by the American Sewer Pipe Co., Akron, O. Drift opening, pick mine, furnace ventilation. W. J. Baxter, R. D. No. 2, Toronto, O., superintendent; Jas. Sines, Empire, O., mine boss. No. 6 seam, 2½ feet thick; 11 miners and 3 day men employed. Coal is used for burning sewer pipe. July 8th, condition of mine fair. October 18th, mine closed down. December 28th, still suspended.

SMALL MINES IN JEFFERSON COUNTY.

Verbolt.

Located at Tiltonsville, O. Operated by Henry Verbolt. Three miners employed. Drift opening, pick mine.

Cox Coal Co.

Located at Brilliant, O. Drift opening, pick mine. Owned and operated by Cox Coal Co., Brilliant, O. Domestic mine. Employs 4 miners and 1 day man. November 5th, conditions were such that it was necessary to prohibit operations; no air, and drainage bad. December 3rd, furnace built and conditions improved.

Bob Hill.

Located southwest of Steubenville, O. Miles Lee, Steubenville, O., manager and mine boss. Employs 3 miners and 1 day man. Machine mine, domestic trade; natural ventilation. The intention is to work quite a number of men soon. Commenced running coal December 1st. Mine has been idle a long time.

Ekey.

Situated at Wintersville, operated by E. H. Ekey, R. D. No. 2, Steubenville, O. Drift opening, No. 8 seam; domestic trade; pick mine; employs 5 miners and 1 day man.

Niesen.

Located four miles west of Steubenville, O. Operated by H. Niesen, R. D. No. 2, Steubenville, O. Drift opening, domestic trade, No. 8 seam; 2 miners and 1 day man employed. Mine opened in 1909.

Speaks.

Located three miles southwest of Steubenville, O. Operated by Jas. Speaks, a place, who is mine boss. Drift, furnace ventilation; pick mine; domestic

trade. Employs 7 miners and 1 day man. October 1st, mine in poor condition; ventilation weak; all the air leaked through the brattices before it got to the men; gave instructions conditions must be improved without delay. December 8th ventilation much improved; otherwise, mine in fair condition.

CLAY MINES IN JEFFERSON COUNTY.

Little Giant.

Located at Toronto, O. Owned and operated by the Toronto Fire Clay Co., Toronto, O. Shaft opening, 45 feet deep. Harry Nicholson, superintendent; A. S. Peckins, mine boss, both of Toronto, O. Fan ventilation. July 7th, 15 miners and 11 day men employed; mine in fair condition, with the exception of water that was supposed to be coming from the Jefferson, an old abandoned mine. A place is being driven in order to tap this mine, boring 30 ft. bore holes in advance, the intention being to pump the water out of this mine. October 13th, condition of mine fair, not yet having broken into the old mine.

Forest City.

Located at Toronto, O. Owned and operated by the American Sewer Pipe Co., Toronto, O. W. B. Francy, superintendent; Jas. Milne, mine boss, both of Toronto, O. Slope opening, fan ventilation; 11 miners and 8 day men employed. July 6th and October 13th, conditions commendable.

Great Western.

Located at Toronto, O. Owned by the above company. W. B. Francy, superintendent; Daniel Hinkle, mine boss. Slope opening, 10 miners and 7 day men employed. Conditions fair.

Calumet.

Located at Toronto, O. Owned and operated by above company. W. B. Francy, superintendent; Geo. Gloss, mine boss, both of Toronto, O. Exhaust steam ventilation; 10 miners and 8 day men employed. Main haulage timbers in poor condition. October 15th, mine suspended.

American Sewer Pipe.

Located at Freemans, owned and operated by American Sewer Pipe Co., Pittsburg, Pa. W. J. Baxter, R. D. No. 2, Toronto, O., superintendent; Jas. Sines, Empire, O., mine boss. Drift opening, 8 miners and 5 day men employed. Ventilation poor; otherwise condition of mine good. October 15th, mine suspended.

Kaul-Oberkirch.

Located at Toronto, O. Slope opening, 170 feet long. Owned and operated by the Kaul-Oberkirch Co., Toronto, O. Employs 10 miners and 7 day men. Geo. Myers, Toronto, O., superintendent; J. O. Evans, R. D. No. 2, Steubenville, O., mine boss. Condition good throughout the year.

Minor.

Located at Freemans, owned and
 Cleveland, O. E. S. Minor, Em
 2, Toronto, O., mine boss. F
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COAL LIST

LIST OF LARGE COAL COMPANIES IN OHIO, WITH ADDRESSES, FOR 1909.

| Name of Owner or Operator. | P. O. Address. |
|------------------------------------|------------------|
| Athens County. | |
| Baileys Run Coal Co..... | Toledo. |
| Black Diamond Coal & Coke Co..... | Columbus. |
| Canaan Coal Co..... | Canaanville. |
| Carbon Coal Mining Co..... | Amesville. |
| Carbondale Coal Co..... | Carbondale. |
| C. & H. C. & I. Co..... | Columbus. |
| Federal-Hocking Coal Co..... | Columbus. |
| Federal Coal Co..... | Marietta. |
| Hixsylvania Coal Co..... | Columbus. |
| Hocking Mining Co..... | Athens. |
| Imperial Coal Mining Co..... | Columbus. |
| Lorain Coal & Dock Co..... | Columbus. |
| Luhrig Coal Co..... | Cincinnati. |
| Maple Mining Co..... | Nelsonville. |
| Northern Fuel Co..... | Columbus. |
| New Pittsburg Coal Co..... | Columbus. |
| New York Coal Co..... | Columbus. |
| Nelsonville Brick Co..... | Nelsonville. |
| Poston, C. L..... | Athens. |
| Schuler, J. F..... | Sharpsburg. |
| Silcott Coal Co., G. C..... | Nelsonville. |
| Sunday Creek Company..... | Columbus. |
| York Clay & Mining Co..... | Nelsonville. |
| Belmont County. | |
| American Sheet & Tin Plate Co..... | Pittsburg, Pa. |
| Bannock Coal Co..... | Akron. |
| Barton Coal Co..... | Cleveland. |
| Bakewell Coal Co..... | Bellaire. |
| Bellaire Coal & Coke Co..... | Bellaire. |
| Belmont Coal Mining Co..... | Pittsburg, Pa. |
| Captina Coal Co..... | Armstrong Mills. |
| Carnegie Steel Company..... | Bellaire. |
| Columbia Coal Co..... | Akron. |
| Colburg Coal Co..... | Columbus. |
| Cambria Mining Co..... | Toledo. |
| Ft. Pitt Coal Co..... | Pittsburg, Pa. |
| Flushing Coal Co..... | Elyria. |
| Gorrell Coal Co., J. W..... | Alliance. |
| on Coal Co..... | Stewartsville. |
| on Mining Co..... | Holloway. |
| d Coal Co..... | Wheeling, W. Va. |
| Coal Co..... | Bellaire. |

LIST OF LARGE COAL COMPANIES IN OHIO—Continued.

| Name of Owner or Operator. | P. O. Address. |
|------------------------------------|------------------|
| Belmont County—Concluded. | |
| Kennon Coal & Mining Co..... | Cleveland. |
| Lorain Coal & Dock Co..... | Columbus. |
| Moores Run Coal Co..... | Fairmont, W. Va. |
| Morgan Coal Co., A. J..... | Bellaire. |
| Pittsburg-Belmont Coal Co..... | Columbus. |
| Pittsburg & Cleveland Coal Co..... | Cleveland. |
| Purseglove Coal Co..... | St. Clairsville. |
| Provident Coal Co..... | St. Clairsville. |
| Raven Coal Co..... | Wheeling, W. Va. |
| Roby-Somers Coal Co..... | Cleveland. |
| Rail & River Coal Co..... | Pittsburg, Pa. |
| St. Clair Coal Co..... | Cleveland. |
| Schick & Co., M. J..... | Bellaire. |
| Trolls Coal Mining Co..... | St. Clairsville. |
| Virginia Hill Coal Co..... | Cleveland. |
| West Wheeling Coal Co..... | Bridgeport. |
| Whitaker-Glessner Co..... | Wheeling, W. Va. |
| Werner Coal Co., Wm. A..... | Zanesville. |
| Y. & O. Coal Co..... | Cleveland. |
| Carroll County. | |
| Big Four Clay Co..... | Malvern. |
| Deveny-Kirk Coal Co..... | Salineville. |
| Deckman-Duty Brick Co..... | Cleveland. |
| Greedy-Beatty Clay Co..... | Magnolia. |
| Lincoln Coal Co..... | Sherodsville. |
| Magnolia Coal Co..... | Magnolia. |
| Metropolitan Paving Brick Co..... | Canton. |
| National Fireproofing Co..... | Canton. |
| Ohio Mining & Railway Co..... | Massillon. |
| Pittsburg & Malvern Clay Co..... | Pittsburg, Pa. |
| Robinson Clay Product Co..... | Akron. |
| Somers Mining Co..... | Cleveland. |
| Sterling Mining Co..... | Cleveland. |
| Strip Vein Coal Co..... | Salineville. |
| Columbiana County. | |
| Big Vein Coal Co..... | Cleveland. |
| Buckeye Clay & Coal Co..... | East Liverpool. |
| Buck Coal Co..... | Salem. |
| Card & Prosser Coal Co..... | Cleveland. |
| Columbia Fire Clay Co..... | Cleveland. |
| Delmore Coal Co..... | Cleveland. |

LIST OF LARGE COAL COMPANIES IN OHIO—Continued.

| Name of Owner or Operator. | P. O. Address. |
|---------------------------------------|---------------------|
| Columbiana County—Concluded. | |
| Fairfield Coal Co..... | Cleveland. |
| Herriott Coal Co..... | Lisbon. |
| Neiheisel Coal Co..... | Leetonia. |
| National Fireproofing Co..... | Canton. |
| Negley Coal Co..... | Negley. |
| Ohio & Pennsylvania Coal Co..... | Cleveland. |
| Prospect Coal Co..... | East Palestine. |
| Salem Coal Co..... | Salem. |
| Strabley, Jas. S..... | Salineville. |
| Woolf Bros..... | Homeworth. |
| Wheat Hill Coal Co..... | East Palestine. |
| Coshocton County. | |
| Barnes Coal & Mining Co..... | Coshocton. |
| Columbus Coal & Mining Co..... | Coshocton. |
| Coshocton Coal Co..... | Cleveland. |
| David Davis..... | Conesville. |
| Furnell & Son, Thos..... | Coshocton. |
| Locust Grove Coal Co..... | Coshocton. |
| Laird Bros., R. D. No. 2..... | Coshocton. |
| Morgan Run Coal & Mining Co..... | Cleveland. |
| Oden Valley Coal Co..... | Coshocton. |
| Warwick Coal Co..... | Cleveland. |
| Wade Coal Co..... | Cleveland. |
| Gallia County. | |
| Black Diamond Coal Co..... | Gallia. |
| Riverside Coal Co..... | Columbus. |
| Swan Creek Coal Co..... | Gallipolis. |
| Guernsey County. | |
| Akron Coal Co..... | Akron. |
| Byesville Coal Co..... | Byesville. |
| Consolidated Ohio Coal Co..... | Birds Run. |
| Clinton Coal & Mining Co..... | Cambridge. |
| Cambridge Coal & Mining Co..... | Parkersburg, W. Va. |
| Cambridge Valley Coal Co..... | Cambridge. |
| Cambridge Collieries Co..... | Cleveland. |
| Forsythe Coal Co..... | Cambridge. |
| Guernsey Clay Co..... | Cambridge. |
| Loomis Moss Coal Co..... | Akron. |
| Leatherwood-Consolidated Coal Co..... | Cambridge. |
| Morris Coal Co..... | Cleveland. |

LIST OF LARGE COAL COMPANIES IN OHIO—Continued.

| Name of Owner or Operator. | P. O. Address. |
|-----------------------------------|----------------|
| Guernsey County—Concluded. | |
| National Coal Co..... | Cleveland. |
| O'Gara Coal Co..... | Chicago, Ill. |
| Puritan Coal Co..... | Cambridge. |
| Harrison County. | |
| Blair Mining Co., A. G..... | Toledo. |
| Newton Coal & Mining Co..... | Dennison. |
| Oliver Coal Co..... | Pittsburg, Pa. |
| Roby Coal Co..... | Cleveland. |
| West Mining Co..... | Adena. |
| Hocking County. | |
| Carbon Coal Co..... | Carbon Hill. |
| Cable, R..... | Nelsonville. |
| C. & H. C. & I. Co..... | Columbus. |
| Gem Coal Co..... | Nelsonville. |
| Hocking Fuel Co..... | Columbus. |
| Hocking-Domestic Coal Co..... | Murray. |
| Nelsonville Coal Co..... | Nelsonville. |
| National Fire Proofing Co..... | Pittsburg, Pa. |
| New Pittsburg Coal Co..... | Columbus. |
| Royal Coal Co..... | Nelsonville. |
| Sunday Creek Co..... | Columbus. |
| Starr-Hocking Coal Co..... | Starr. |
| Jackson County. | |
| Alma Coal Co..... | Wellston. |
| Armstrong Coal Co..... | Jackson. |
| Bloomfield Mining Co..... | Jackson. |
| Browne, J. E..... | Wellston. |
| Chapman Coal Co..... | Jackson. |
| Crescent Coal Co..... | Jackson. |
| Cochran Coal Co..... | Jackson. |
| Central Coal Co..... | Jackson. |
| DeWitt Coal Co..... | Wellston. |
| Dayton Coal & Iron Co..... | Wellston. |
| Domestic Coal Co..... | Wellston. |
| Davis Firebrick Co..... | Oak Hill. |
| Evans Coal Co..... | Coalton. |
| Emma Coal Co..... | Jackson. |
| Globe Iron Co..... | Jackson. |
| Gosline & Co., W. A..... | Toledo. |

LIST OF LARGE COAL COMPANIES IN OHIO—Continued

| Name of Owner or Operator. | P. O. Address. |
|------------------------------------|------------------|
| Jackson County—Concluded. | |
| Harper Coal Co..... | Coalton. |
| Jones & Morgan..... | Jackson. |
| Jones Coal Co..... | Jackson. |
| Jackson Iron & Steel Co..... | Jackson. |
| Jackson & Decatur Coal Co..... | Jackson. |
| Keasler Coal Co..... | Wellston. |
| Northern Coal Mining Co..... | Jackson. |
| Ohio Fire Brick Co..... | Oak Hill. |
| Rempel Fuel Co..... | Rempel. |
| Sun Coal Co..... | Jackson. |
| See Kay Coal Co..... | Wellston. |
| Star Furnace Co..... | Jackson. |
| Superior Coal Co..... | Jackson. |
| Tom Corwin Coal Co..... | Dayton. |
| Wellston Coaleries Co..... | Wellston. |
| Ward Coal Co..... | Oak Hill. |
| Jefferson County. | |
| American Sewer Pipe Co..... | Akron. |
| Bergholz Coal Co..... | Bergholz. |
| Blyth Coal Co..... | Pittsburg, Pa. |
| East Ohio Sewer Pipe Co..... | Irondale. |
| Glens Run Coal Co..... | Cleveland. |
| Jefferson Coal Co..... | Cleveland. |
| Kaul-Oberkirch Co..... | Toronto. |
| LaBelle Iron Works..... | Steubenville. |
| LaGrange Coal Co..... | Wheeling, W. Va. |
| Morris-Poston Coal Co..... | Cleveland. |
| Minor Fire Clay Co..... | Cleveland. |
| Ohio & Pennsylvania Coal Co..... | Cleveland. |
| Rayland Coal Co..... | Pittsburg, Pa. |
| Rice Coal Co..... | Cleveland. |
| Roby Coal Co..... | Cleveland. |
| Russell Coal & Mining Co..... | Cleveland. |
| Smith, W. E..... | Wellsville. |
| Speaks, Jas..... | Steubenville. |
| Standard Fire Clay Co..... | Pittsburg, Pa. |
| Steubenville Coal & Mining Co..... | Steubenville. |
| Stratton Fire Clay Co..... | Empire. |
| Toronto Fire Clay Co..... | Toronto. |
| United States Coal Co..... | Cleveland. |
| Witch Hazel Coal Co..... | Youngstown. |
| Wolf Run Coal Co..... | Cleveland. |
| W. & L. E. Coal Mining Co..... | Cleveland. |
| Wabash Coal Co..... | Cleveland. |
| Y. & O. Coal Co..... | Cleveland. |

LIST OF LARGE COAL COMPANIES IN OHIO—Continued.

| Name of Owner or Operator. | P. O. Address. |
|-----------------------------------|----------------|
| Lawrence County. | |
| Buckhorn Coal Co..... | Buckhorn. |
| Black Fork Co..... | Black Fork. |
| Ginn Company, The..... | Ironton. |
| Hall Coal Co., Jno. F..... | Dayton. |
| Halley Coal Co..... | Pedro. |
| Hanging Rock Iron Co..... | Hanging Rock. |
| Ironton Portland Cement Co..... | Ironton. |
| Kelley Nail & Iron Co..... | Ironton. |
| Ryan, Benj..... | Coal Grove. |
| York Portland Cement Co..... | Portsmouth. |
| Mahoning County. | |
| Allison, Zimmerman & Allen..... | Salem. |
| Lowell Coal Mining Co..... | Youngstown. |
| Mahoning & Lake Erie Coal Co..... | Cleveland. |
| Ohio Coal & Clay Co..... | Cleveland. |
| Medina County. | |
| Gerstenslager & Son Coal Co..... | Wadsworth. |
| Hambleton Bros..... | Wadsworth. |
| Hutchinson Coal Co..... | Wadsworth. |
| Reichard, F. T., R. D. No. 1..... | Wadsworth. |
| Williams Coal Co..... | Wadsworth. |
| Meigs County. | |
| Ebersbach, Martin..... | Pomeroy. |
| Harley Coal Co..... | Middleport. |
| Maynard Coal Co..... | Columbus. |
| Monkey Run Coal Co..... | Middleport. |
| Noble Summit Coal Co..... | Middleport. |
| Pomeroy Fuel Co..... | Columbus. |
| Peacock Coal Co..... | Pomeroy. |
| Pittsburg Mining Co..... | Minersville. |
| Pomeroy Coal Co..... | Middleport. |
| Salisbury Coal Co..... | Toledo. |
| Silver Run Coal Co..... | Middleport. |
| Schlaegel Salt Co..... | Pomeroy. |
| Thomas Coal Co..... | Racine. |
| Morgan County. | |
| Carding Coal Co..... | Columbus. |
| Tropic Mining Co..... | Toledo. |

LIST OF LARGE COAL COMPANIES IN OHIO—Continued.

| Name of Owner or Operator. | P. O. Address. |
|---------------------------------------|-------------------|
| Muskingum County. | |
| Blue Rock Coal Co..... | Gaysport. |
| Duncan Run Coal Co..... | Detroit, Mich. |
| Elk Coal Co..... | Columbus. |
| Maynard Bros..... | Columbus. |
| Muskingum Coal & Ry. Co..... | Zanesville. |
| Pan-American Coal Co..... | Newark. |
| Victoria Coal Co..... | Cleveland. |
| Walnut Hill Coal Co..... | Detroit, Mich. |
| W. A. Werner..... | Zanesville. |
| Noble County. | |
| Belle Valley Coal Mining Co..... | Cambridge. |
| Coal Run Coal Co..... | Cambridge. |
| Guernsey Coal & Mining Co..... | Newark. |
| Marion Coal Co..... | Whigville. |
| O'Gara Coal Co..... | Chicago, Ill. |
| Ottawa County (Gypsum). | |
| American Gypsum Co..... | Cleveland. |
| United States Gypsum..... | Gypsum. |
| Perry County. | |
| C. & H. C. & I. Co..... | Columbus. |
| Crooksville Coal Co..... | Crooksville. |
| Chicago & Hocking Coal Co..... | Toledo. |
| Chapman Mining Co..... | Moxahala. |
| Davis Bros..... | Shawnee. |
| Essex Coal Co., Calvin..... | New Straitsville. |
| Gibbs, Geo..... | New Straitsville. |
| Gibbs, Ambrose..... | New Straitsville. |
| Gosline & Co., W. A..... | Toledo. |
| Hamilton & Wallace Coal Co..... | Saltillo. |
| Iron Point Low Vein Co..... | Shawnee. |
| Jones Coal Co..... | New Straitsville. |
| Jenkins & Redfern..... | Shawnee. |
| Kennon Coal & Mining Co..... | Cleveland. |
| New England Coal Co..... | Columbus. |
| New Perry Coal Co..... | Somerset. |
| Peabody Coal Co..... | Chicago, Ill. |
| Simons, A..... | Redfield. |
| Shawnee Coal Mining Co..... | Shawnee. |
| Straitsville Impervious Brick Co..... | New Straitsville. |
| Sines Bros. & Co..... | New Straitsville. |

LIST OF LARGE COAL COMPANIES IN OHIO—Continued.

| Name of Owner or Operator. | P. O. Address. |
|--|-----------------|
| Perry County—Concluded. | |
| Standard-Hocking Coal Co..... | Chicago, Ill. |
| Sunday Creek Company..... | Columbus. |
| Twentieth Century Coal Co..... | Columbus. |
| Union Coal Mining Co..... | Columbus. |
| Upson Coal & Mining Co..... | Newark. |
| Wilbern Coal Co..... | New Lexington. |
| Zanesville Coal Co..... | Crooksville. |
| Portage County. | |
| Hutson Coal Co..... | Cleveland. |
| South Palmyra Coal Co..... | Cleveland. |
| Strong Bros. Coal Co., R. D. No. 14..... | Atwater. |
| Scioto County. | |
| Morgan & Horton..... | Elfort. |
| Harbison-Walker Refractories Co..... | Pittsburg, Pa. |
| Stark County. | |
| Booth Coal Co..... | Navarre. |
| Canton Lime & Fertilizer Co..... | Canton. |
| Edgefield Coal Co., R. D. No. 2..... | Canton. |
| Keim Brick & Tile Co..... | Louisville. |
| Louisville Brick & Tile Co..... | Louisville. |
| Massillon Stone & Fire Brick Co..... | Massillon. |
| Massillon Crystal Coal Co..... | Massillon. |
| Massillon Coal Mining Co..... | Cleveland. |
| Massillon-Navarre Coal Co..... | Cleveland. |
| Massillon City Coal Co..... | Massillon. |
| Massillon Elm-Run Coal Co..... | Cleveland. |
| National Fire Proofing Co..... | Canton. |
| Plaskett, John..... | North Industry. |
| Pocock Coal Co..... | Massillon. |
| Roach, Wm., No. 831 Wade Ave..... | Alliance. |
| Sonnhalter Coal Co..... | Massillon. |
| Steiner Coal Co..... | Canton. |
| Smith, Mrs. L. E..... | Greentown. |
| Smith Coal Co., G. F..... | New Berlin. |
| Taggart Coal Co..... | Massillon. |
| Whitacre Fireproofing Co..... | Waynesburg. |
| Willow Grove Coal Co., R. D. No. 1..... | Massillon. |

LIST OF LARGE COAL COMPANIES IN OHIO—Continued.

| Name of Owner or Operator. | P. O. Address. |
|---|-------------------|
| Summit County. | |
| Brewster Coal Co..... | Akron. |
| Beechwood-Massillon Coal Co..... | Cleveland |
| Coitage Grove Coal Co..... | South Akron. |
| Clinton Coal Co..... | Clinton. |
| Robinson Clay Product Co..... | Akron. |
| Tuscarawas County. | |
| American Sheet & Tin Plate Co..... | Pittsburg, Pa. |
| Beaver Dam Coal Co..... | Cleveland. |
| Buckeye Fire Clay Co..... | Uhrichsville. |
| Cleveland & Tuscarawas Coal Co..... | Cleveland. |
| Dennison Mining Co..... | Dennison. |
| East Goshen Coal Co..... | Cleveland. |
| Federal Clay Product Co..... | Mineral City. |
| Goshen Coal & Mining Co..... | Cleveland. |
| Goshen Valley Coal Co..... | Massillon. |
| Goshen Central Coal Co..... | Massillon. |
| Holden, C. E..... | Mineral City. |
| Howell Williams & Son, R. D. No. 1..... | Dennison. |
| Midvale-Goshen Coal Co..... | Cleveland. |
| Massillon-Tuscarawas Coal Co..... | Massillon. |
| Markley, Geo..... | Mineral City. |
| Mullins Coal Co., Jas..... | Cleveland. |
| Nungesser, C. J..... | Beidler. |
| Novelty Brick & Coal Co..... | Newcometstown. |
| Ohio Coal & Coke Co..... | Cleveland. |
| Peacock Coal Mining Co..... | Mineral City. |
| Ridgway-Burton Co..... | Cleveland. |
| Royal-Goshen Coal Co..... | New Philadelphia. |
| Robinson-Graves Sewer Pipe Co..... | Uhrichsville. |
| Reeves Coal Co..... | Canal Dover. |
| Robinson Clay Product Co..... | Akron. |
| Somerdale Coal Co..... | Cleveland. |
| Vinton County. | |
| Alma Cement Co..... | Oreton. |
| Alma Coal Co..... | Wellston. |
| Fobes-Tompkins Coal Co..... | Columbus. |
| Lawler, John L..... | Columbus. |
| Monitor Coal Co..... | Wellston. |
| McArthur Brick Co..... | McArthur. |
| Puritan Cement Co..... | McArthur. |
| Valley Coal Co..... | Dayton. |

LIST OF LARGE COAL COMPANIES IN OHIO—Concluded.

| Name of Owner or Operator. | P. O. Address. |
|-----------------------------------|----------------|
| Wayne County. | |
| Minglewood-Massillon Coal Co..... | Cleveland. |
| Massillon Elm Run Coal Co..... | Cleveland. |
| Massillon Coal Mining Co..... | Cleveland. |
| West Lebanon Coal Co..... | Cleveland. |



LIMESTONE OPERATORS

LIST OF LIMESTONE OPERATORS, WITH ADDRESSES, FOR YEAR 1909.

| Name of Owner or Operator. | P. O. Address. |
|--------------------------------------|------------------|
| Allen County. | |
| Hiner & Cunningham..... | Lima. |
| E. J. Ford..... | Delphos. |
| Kimmel Bros. & Son..... | Bluffton. |
| Watt Bros..... | Lafayette. |
| The Lima Stone Company..... | Lima. |
| The Goetschius Stone Co..... | Lima. |
| The Bluffton Stone Co..... | Lima. |
| W. H. Krofft..... | Ada. |
| Rockport Stone Co..... | Beaverdam. |
| Belmont County. | |
| Caruth Bros..... | Bridgeport. |
| Butler County. | |
| Edw. Burkhardt, R. D. No. 7..... | Hamilton. |
| Daniel Pabst, Venice Road..... | Hamilton. |
| J. H. Killough..... | College Corners. |
| Clark County. | |
| Geo. F. Newcomb, R. F. D. No. 8..... | Springfield. |
| The H. H. Moores Co., Box 585..... | Springfield. |
| W. A. Rubsam..... | Springfield. |
| J. W. Jenkins..... | Springfield. |
| The Moores Lime Co., Box 467..... | Springfield. |
| Mills Bros..... | Springfield. |
| The Casparis Stone Co..... | Columbus. |
| The Strunk-Meyer Lime Co..... | Cold Springs. |
| Ira Roach, R. D. No. 8..... | Springfield. |
| The Springfield Coal & Ice Co..... | Springfield. |
| Clinton County. | |
| G. H. Benlehr..... | Clinton. |
| Bloom & Conner..... | Wilmington. |
| Crawford County. | |
| Sousley Bros..... | Ada. |
| Guss V. Harer Co..... | Lykens. |
| The Brokensword Stone Company..... | Bucyrus. |

LIMESTONE OPERATORS—Continued.

| Name of Owner or Operator. | P. O. Address. |
|---|----------------|
| Delaware County. | |
| M. Meredith & Son..... | Radnor. |
| Jas. Reany, Jr., 1315 Continental Bldg..... | Baltimore, Md. |
| The White Sulphur Stone Co..... | Marion. |
| Erie County. | |
| The Kelley Island Lime & Transport Co..... | Cleveland. |
| The Wagner Stone Company..... | Sandusky. |
| Franklin County. | |
| Harry Walcutt, Station "A"..... | Columbus. |
| Scioto Stone Co., 423 Cham. of Com. Bldg..... | Columbus. |
| Franklin Stone Co..... | Columbus. |
| S. Casparis..... | Columbus. |
| Wm. Miller, No. 1422 West Broad St..... | Columbus. |
| Columbus Stone Co., Carnegie Bldg..... | Pittsburg, Pa. |
| Greene County. | |
| J. M. Fudge..... | Xenia. |
| Geo. C. Toland..... | Jamestown. |
| D. S. Ervin..... | Cedarville. |
| Boots, Conklin & Fudge..... | Xenia. |
| Hancock County. | |
| Tarbox & McCall..... | Findlay. |
| Wm. A. Bibler..... | Arlington. |
| Hardin County. | |
| Jas. G. Tressel..... | Ada. |
| The France Company..... | Toledo. |
| Jno. Herzog & Son..... | Patterson. |
| Hamilton County. | |
| J. J. Schmitz, No. 3344 Observatory Ave..... | Cincinnati. |
| Theo. Connelle, No. 6506 Center St..... | Madisonville. |
| Grant Bros., Hyde Park Sta..... | Cincinnati. |
| Floyd Campbell, No. 1036 Florence Ave..... | Cincinnati. |
| Benj. Cooney, No. 718 Whittier St., Avondale..... | Cincinnati. |
| N. Ruehl, Station "L"..... | Cincinnati. |
| Henry Stagge, No. 2053 Mills Ave..... | Norwood. |

LIMESTONE OPERATORS—Continued.

| Name of Owner or Operator. | P. O. Address. |
|--------------------------------------|------------------|
| Highland County. | |
| Frank Sharp..... | Lynchburg. |
| N. W. Hixson..... | Highland. |
| W. E. Alexander..... | Lynchburg. |
| W. H. McClelland..... | Lynchburg. |
| Holmes County. | |
| Jacob Muskoff..... | Beach City. |
| Jackson County. | |
| Geo. Eagle..... | Jackson. |
| Lawrence County. | |
| M. Riley..... | Ort. |
| J. J. Burke, No. 207 Mill St..... | Ironton. |
| Hanging Rock Iron Co..... | Hanging Rock. |
| Superior Portland Cement Co..... | Superior. |
| E. B. Willard & Co..... | Steece. |
| Thrs. McConnell..... | Steece. |
| Logan County. | |
| East Liberty Stone Co..... | Bellefontaine. |
| H. M. Brown & Son..... | Belle Center. |
| Bellefontaine Stone & Lime Co..... | Bellefontaine. |
| Lucas County. | |
| Imperial Stone Quarry Co..... | Toledo. |
| Whitehouse Stone Co., Station A..... | Toledo. |
| The France Company..... | Toledo. |
| Geo. Zeller, Box 110..... | Maumee. |
| Marion County. | |
| D. M. Hinman..... | Marion. |
| John D. Owens & Son..... | Owens. |
| Ohio & Western Lime Co..... | Huntington, Ind. |
| John Evans Lime & Stone Co..... | Marion. |
| J. M. Hamilton..... | Marion. |
| Mercer County. | |
| Emil Wagner..... | Ft. Recovery. |
| C. E. Edington..... | McComb. |

LIMESTONE OPERATORS—Continued.

| Name of Owner or Operator. | P. O. Address. |
|--|------------------|
| Miami County. | |
| Mrs. M. E. Face..... | Covington. |
| Jackson Stone Co..... | Covington. |
| J. W. Ruhl..... | Covington. |
| Ohio Marble Co..... | Piqua. |
| The Statler Stone Co..... | Piqua. |
| A. A. Maxwell..... | Ludlow Falls. |
| Montgomery County. | |
| A. J. Shaffer..... | Brookville. |
| H. B. Shoup, R. D. No. 3..... | Dayton. |
| E. B. Kimmel, R. D. No. 14..... | Dayton. |
| Cold Spring Stone Co., No. 2443 West 3rd St..... | Dayton. |
| Dayton Limestone Co..... | Dayton. |
| Ottawa County. | |
| Kelley Island Lime & Transport Co..... | Cleveland. |
| Ohio & Western Lime Co..... | Huntington, Ind. |
| Paulding County. | |
| Chas. Bobenmyer..... | Oakwood. |
| Preble County. | |
| Reinheimer Stone Co..... | New Paris. |
| Richard Danily..... | New Paris. |
| F. P. Hoffman..... | Monticello, Ill. |
| G. W. Homsher..... | Camden. |
| Peter Fouts..... | Camden. |
| J. A. Kautz..... | Eaton. |
| O. M. Wright..... | College Corners. |
| The Lewisburg Stone Co..... | Lima. |
| Putnam County. | |
| J. W. McDowell..... | Ottawa. |
| D. P. Schumacher & Son..... | Bluffton. |
| Columbus Grove Stone Co..... | Columbus Grove. |
| L. A. Rower..... | Vaughnsville. |
| Nick Lauer..... | Ottoville. |
| Ft. Jennings Stone Co..... | Ft. Jennings. |
| J. S. Blosser..... | Cloverdale. |

LIMESTONE OPERATORS--Continued.

| Name of Owner or Operator. | P. O. Address. |
|---|------------------|
| Sandusky County. | |
| Geo. W. Shreffler & Son..... | Fremont. |
| Ohio & Western Lime Co..... | Huntington, Ind. |
| Woodville Lime & Cement Co..... | Toledo. |
| Bellevue Stone Co..... | Bellevue. |
| Swint Bros..... | Fremont. |
| Gottrone Bros..... | Fremont. |
| John Welsh & Bro..... | Helena. |
| Grape Island Stone Co., Box 110..... | Maumee. |
| Seneca County. | |
| J. F. Wolf..... | Scipio Siding. |
| Holran Stone Co..... | Cleveland. |
| J. E. Rine..... | Flat Rock. |
| S. A. Saul..... | Bloomville. |
| J. F. Harpster..... | Flat Rock. |
| Ohio & Western Lime Co..... | Huntington, Ind. |
| West Lime & Stone Co..... | Tiffin. |
| The France Co..... | Toledo. |
| Fred Sievert..... | Bloomville. |
| Spence Bros., No. 12960 Euclid Ave..... | Cleveland. |
| Stark County. | |
| Diamond Portland Cement Co..... | Middle Branch. |
| Frank Helms..... | Canton. |
| Van Wert County. | |
| Bowersock & Crawford..... | Middlepoint. |
| The Erie Stone Co..... | Van Wert. |
| Holland & Lampke..... | Van Wert. |
| W. J. Semple, R. R. No. 10..... | Van Wert. |
| The France Co..... | Toledo. |
| Aaron Fisher, No. 738 Ohio St..... | Delphos. |
| Vinton County. | |
| McArthur Brick Co..... | McArthur. |

LIMESTONE OPERATORS—Concluded.

| Name of Owner or Operator. | P. O. Address. |
|---|------------------|
| Wood County. | |
| Damschroder & France..... | North Baltimore. |
| E. T. Reed..... | Elmore. |
| C. J. Miller & Co., 107 Chamber of Commerce Bldg..... | Toledo. |
| Mercer & Mercer..... | Bowling Green. |
| Ohio & Western Lime Co...? | Huntington, Ind. |
| Stony Ridge Stone Co..... | Stony Ridge. |
| Doherty & Co..... | Toledo. |
| The France Co..... | Toledo. |
| C. E. Edington..... | McComb. |



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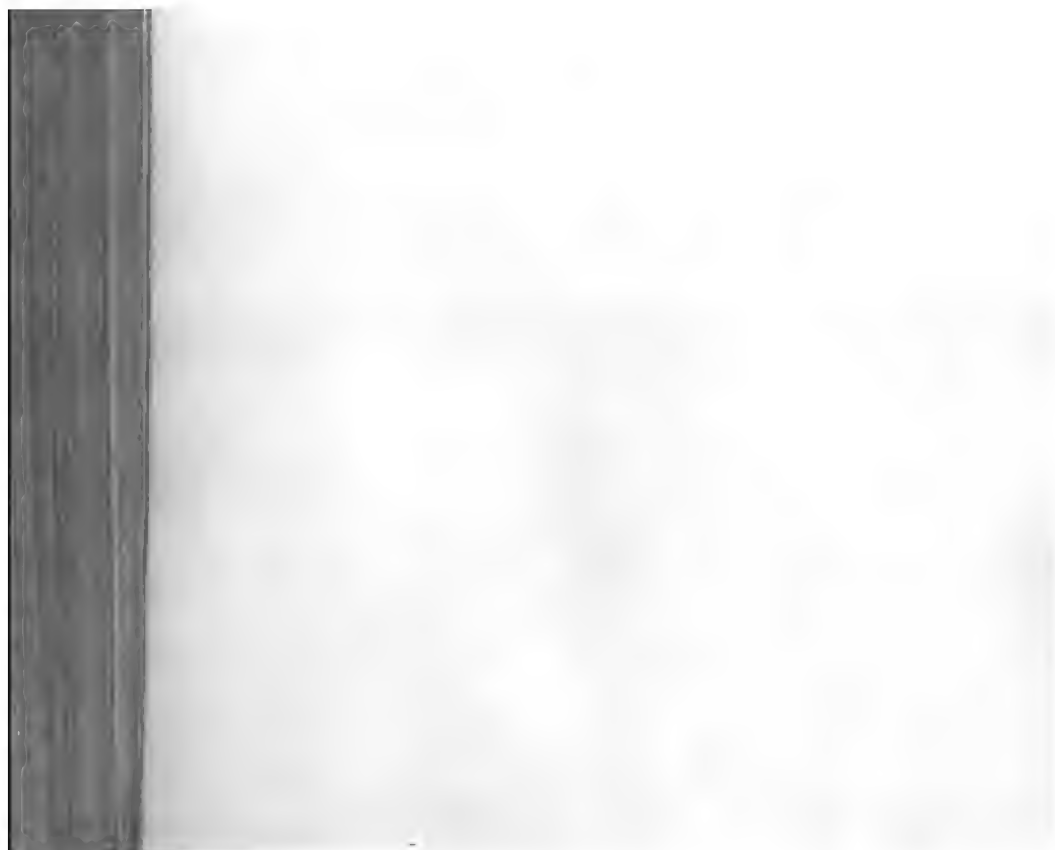
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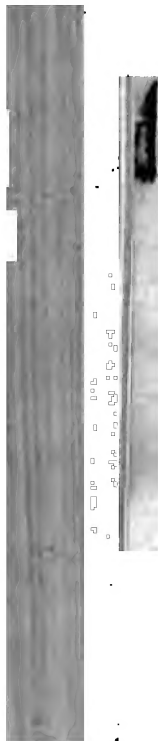
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NOTICE.

A copy of the New Mining Code will be mailed to any one making application to this Department.









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